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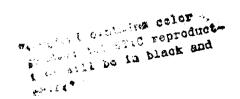


## **Environmental Characterization** for Target Acquisition

Report 3
New Concepts for Evaluating Low-Grazing
Angle Radar Measurements

by John O. Curtis, Bruce M. Sabol Environmental Laboratory

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Prepared for U.S. Army Aviation Applied Technology Directorate and Headquarters, U.S. Army Corps of Engineers

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### **Environmental Characterization** for Target Acquisition

## Report 3 New Concepts for Evaluating Low-Grazing Angle Radar Measurements

by John O. Curtis, Bruce M. Sabol Environmental Laboratory

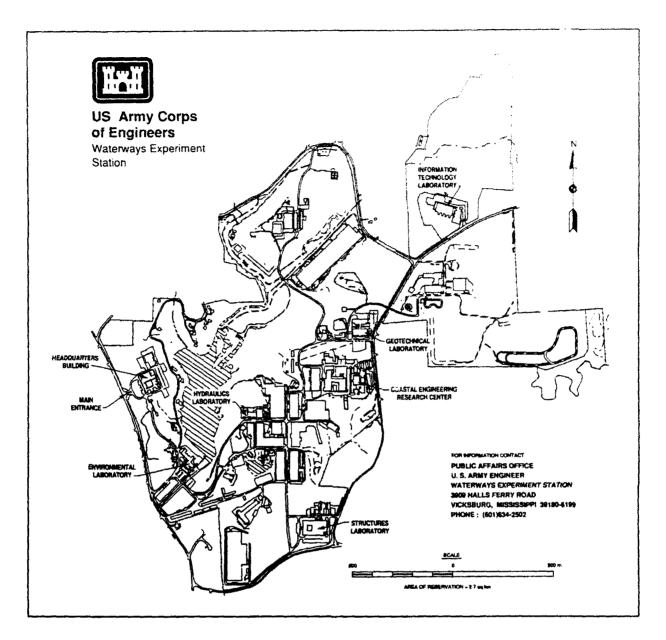
U.S. Army Corps of Engineers Waterways Experiment Station 3909 Halls Ferry Road Vicksburg, MS 39180-6199

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#### **Preface**

The study reported herein was conducted by the U.S. Army Engineer Waterways Experiment Station (WES) during fiscal years 1991-1992 as part of the Environmental Characterization for Target Acquisition Program. This program was jointly funded by the U.S. Army Aviation Applied Technology Directorate (AATD), Fort Eustis, VA, and by Headquarters, U.S. Army Corps of Engineers, Washington, DC. Mr. Nyle Wilcocks was the AATD Technical Monitor.

These efforts were under the general supervision of Dr. John Harrison, Director, Environmental Laboratory (EL), Dr. Victor Barber, Acting Chief, Environmental Systems Division (ESD), EL, and Mr. H. Wade West, Chief, Environmental Analysis Group (EAG), ESD. Mr. Bruce Sabol, EAG, was the Principal Investigator for this project. Dr. John O. Curtis and Mr. Sabol, EAG, prepared this report. The labor-intensive task of assembling Appendix C was capably performed by Mr. Sean Brewer (EAG contract student).

At the time of publication of this report, Director of WES was Dr. Robert W. Whalin. Commander was COL Leonard G. Hassell, EN.

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## Conversion Factors, Non-SI to SI Units of Measurement

Non-SI units of measurement used in this report can be converted to SI units of follows:

Multiply	Ву	To Obtain
degrees (angle)	0.01745329	radians
feet	0.3048	meters

#### 1 Introduction

#### **Background**

One possible scenario for modern military helicopter operations involves the use of both natural and man-made ground features to provide cover for the aircraft until the pilot decides to pop up and attempts to locate and fire on a suspected target. Target acquisition and weapon delivery procedures will ultimately be automated, making use of a number of different sensors whose data may be fused to provide the greatest opportunity for success. The design of such sensors and sensor fusion algorithms can be optimized by a thorough understanding of terrain and target interactions with each other and with each sensor under various environmental conditions.

To this end, the U.S. Army Aviation Applied Technology Directorate (AATD), located at Fort Eustis, VA, managed a field demonstration of multiple sensors called the Multi-Sensor Fusion Demonstration (MSFD) whose purpose was to collect target acquisition performance data on targets on the ground using data from individual sensors as well as combinations of sensors. The MSFD took place in February and March 1988 at Fort Hunter Liggett, CA. Sensors were provided and tested by two organizations, Martin Marietta Orlando Aerospace and a combined team from Hughes Aircraft Company and Texas Instruments. The U.S. Army Engineer Waterways Experiment Station (WES) was initially tasked by AATD to provide ground truth information for these tests and to conduct studies on the impact of environmental conditions on sensor performance, particularly within the visual and thermal infrared portions of the spectrum.

#### **Objectives of This Study**

After completion of the MSFD, WES was additionally tasked with providing input to AATD on how test sites might be characterized with respect to sensors that operate in the millimeter wave portion of the spectrum. The WES staff felt that the first step that should be taken to respond to this last tasking was to closely reexamine existing data collected by millimeter wave sensors with the goal of assessing the impact of terrain conditions on the sensors' ability to locate and identify targets of interest and not simply measuring their ability to find those targets. In other words, the objectives of this study are to determine whether or not the terrain presents target-like features to the sensor and to determine if that behavior can be quantified and modeled so that one might be able to predict future test and/or battlefield performance for a given millimeter wave sensor.

WES has developed an image metrics approach to characterizing test sites within the visible and thermal infrared portions of the spectrum. Because radar data like that collected during the MSFD can be displayed in an "image" form (slant range versus azimuth position), the most logical approach to quantifying target-like features within these images was to apply the appropriate target feature metrics (filters) to the radar data collected at Fort Hunter Liggett. Therefore, one path taken in this study was to acquire as much MSFD radar data as possible, to convert those data to "images," and to apply the simplest radar target feature metrics to those images to quantify target-like features within the environment.

The second path taken to characterize test site terrain with respect to radar sensors was to use a very simple reflectance model to predict the backscatter response of radar energy that is due only to terrain surfact geometry at the test site. A point light source was placed at the two locations for the MSFD sensor test-beds and a simple Lambertian scattering model was used to calculate backscattered power from a three-dimensional finite element representation of the test site terrain surface. These predictions were compared qualitatively with real data to determine the relative impact of terrain geometry on radar returns. Furthermore, where available, overlays of the locations of trees and significant shrubbery were prepared to supplement the qualitative assessment of the impact of environmental conditions on radar data.

#### Scope of Report

Chapter 2 contains a description of the radar data from the MSFD that were acquired by WES for this study as well as some details about how those data had to be processed to produce "images." A description of the target feature metrics used in this study are found in Chapter 3 along with the results of applying those filters to one of the MSFD tests. Chapter 4 discusses the light model and vegetation overlay studies, and Chapter 5 summarizes the results and makes recommendations for future studies and data collection methodology.

Three appendices are included. Appendix A contains a summary of statistics associated with applying the target feature metrics to all of the available radar scenes. Appendix B summarizes target feature metric statistics as they relate to the man-made targets within each scene. Appendix C is a graphical output summary that contains scene filter results, terrain contour maps, backscatter prediction results, and vegetation overlays for all of the scenes.

<sup>&</sup>lt;sup>1</sup> B. M. Sabol and S. Rivera. (1993). "Environmental characterization for target acquisition; Report 2, Analysis of EO imagery (in preparation)," U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

#### 2 MSFD Radar "Images"

#### **Data Supplied to WES**

Through the efforts of the AATD, radar data for 31 separate MSFD tests were supplied to WES by Martin Marietta. Of these 31 files, which represented all of the MSFD data possessed by Martin Marietta, only 24 could be read on WES data processing systems without errors. Data were not available from the Hughes/Texas Instrument team. Details on the format of the Martin data and the procedures required to generate radar "images" from these data are presented in a later section.

When reduced to image format, the Martin radar can be thought of as illuminating a patch of terrain roughly 420 m in range depth and encompassing an azimuth sweep of about 24 deg. Table 1 contains a listing of all of the useful Martin data by MSFD test numbers. Also contained in that table is an average range and an azimuth angle (clockwise from north) that can be used to approximately locate the center of the illuminated area. The "High" and "Low" site designations on this table signify the location of the radar system for each test. Depression angles from the radar locations to the center of the test sites never exceeded 6 deg.

Figures 1 and 2 contain ground plane representations of the approximate area covered by each of the MSFD tests for the radar located at the high site and low site, respectively. The elevation contour lines superimposed on these figures are at 200-ft intervals.

#### Creation of Radar "Images"

The 31 MSFD test files sent to WES by Martin Marietta consisted of range-corrected (but not calibrated) inphase and quadrature frequency domain data for the K<sub>a</sub>-band circularly polarized radar system used at the MSFD. Data files ranged in size from 23 MBytes to 73 MBytes and contained multiple azimuth sweeps of each test area and usually two sets of different range gate data. The term "range gate" as used in this report refers to a set of data that is collected by the receiver and recorder within a very specific range of time delays following the transmission of the wave form. Each range gate contained 20 coarse range cells that were defined by the pulse width of the radar wave form. Furthermore, the data were collected by stepping frequencies in both an up and down direction, the total bandwidth of the sweep determining a theoretical limit on range resolution. Data were also collected with the center of the beam at two different elevation settings.

<sup>&</sup>lt;sup>1</sup> A table of factors for converting non-SI units of measurement to SI (metric) units is presented on page vi.

Table 1
MSFD Test Data Used for These Studies

Test No	Radar Site	Avg Range m	Central Az Angle, deg	Central El Angle, deg
MS5502	HIGH	4120	161 6	2.83
MS5503	HIGH	1780	232 5	5 68
MS5504	HIGH	2460	192.2	4 78
MS5601	нідн	3015	238 1	3 63
MS5602	HIGH	3960	171.8	2.97
MS5603	HIGH	3650	242.9	3.17
MS5604	HIGH	3040	174.7	3 72
MS5702	HIGH	4460	161 9	2.70
MS5703	нідн	3935	251.7	2.77
MS5704	HIGH	2340	202.4	4.75
MS5801	HIGH	2430	232.7	3.58
MS5802	нісн	4460	162 1	2.72
MS5803	HIGH	1450	262.3	5 50
MS5804	HIGH	4450	162.1	2.20
MS6001	LOW	3880	284.7	0.23
MS6002	LOW	3995	286.4	0.33
MS6004	LOW	3840	285.8	0.32
MS6101	LOW	3960	285.6	0.27
MS6102	LOW	3920	286.5	0.27
MS6301S1	LOW	1960	277.1	0.75
MS6301L1	LOW	3050	277.1	0.42
MS6403	LOW	1555	297.1	0.70
MS6603	LOW	2540	257.9	0.37
MS6701	LOW	2440	275.8	0.67

S = short range; L = long range.

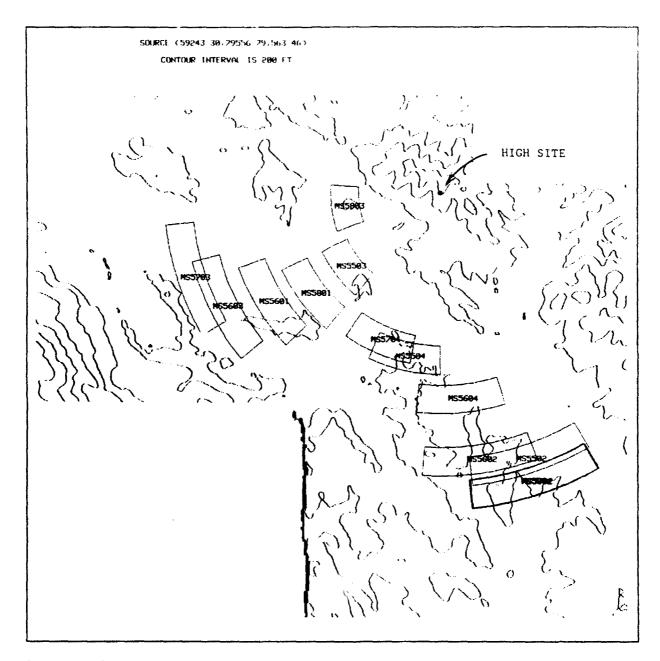


Figure 1. MSFD radar test high site data coverage

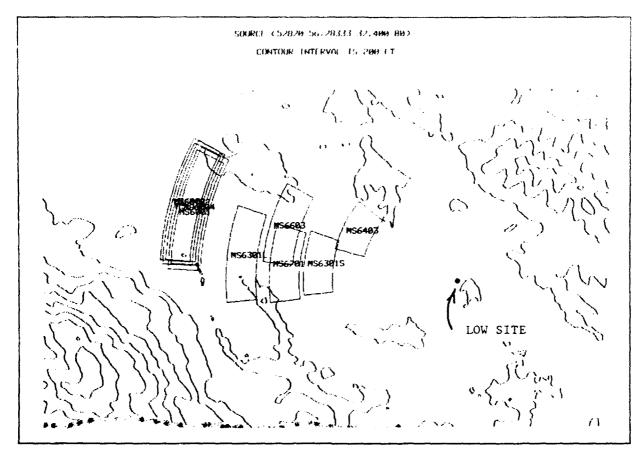


Figure 2. MSFD radar low site data coverage

The point of listing all of these variables that were a part of the data collection process is to emphasize that each data file contained an enormous amount of useful information. For the purposes of this study, much of those data were redundant. This is not to say that sophisticated data processing algorithms could not make good use of multiple terrain sweeps, overlapping elevations, and overlapping range gates, but the study reported herein was not intended to be a target detection optimization effort. Before any of the target feature metrics that form the heart of this site characterization procedure could be applied to a given test, some kind of data compression had to be performed. Acquiring a clear understanding of how the data were arranged and developing a procedure for producing a smaller useful data set was a nontrivial matter.

Martin Marietta provided WES with FORTRAN codes that could be used immediately to read record headers for these data files but that lacked the proprietary subroutine that performed the inverse Fourier Transforms for converting to the time (or range) domain. In addition, it was not discovered until much later that the way in which the data are stored in the frequency domain resulted in a wraparound of data in range; i.e., one had to know the algorithm for locating the center of each coarse range cell. This algorithm was finally obtained from a classified Martin Marietta report.

Without going into any great detail, the basic procedure for compressing the Martin files into something more useful for these studies was to create a fine-range resolution, two-dimensional map for each radar elevation setting and for each test. The fine-range map was established by first identifying a pair of azimuth sweeps, one in each of two successive range gates, with azimuth marks on the record

headers that were most compatible. This was done by reading all of the headers and computing the minimum sum of squares of differences between successive range gate sweep azimuth marks; in other words, find the pair of azimuth sweeps in successive range gates that best line up. An inverse Fast Fourier Transform routine was written to produce fine-range resolution data from each coarse range cell, overlapping data were eliminated, and a continuous string of fine-range results was produced for each azimuth setting. The end result for each radar elevation or depression angle setting (the elevation designated "bar0" is a depression angle greater than the elevation designated as "bar1") was a multi-dimensional array of data measurements that are proportional to power returned to the radar from the terrain and/or targets. There were 1,400 fine-range cells within each of 33 different azimuth settings, with a separate "image" for each of the two radar polarization combinations (right circular received and left circular received for right circular transmitted signals). In this way, data files that consisted of tens of MBytes of data were compressed to two files (two elevations) of about 370 kBytes each that could readily be turned into two-dimensional "images" in range-azimuth space.

The intent of these studies is not to find a way to improve signal-to-noise ratios to better detect targets within natural backgrounds, but to answer the following question: Given a single sweep of the terrain, how many target-like features are out there? Therefore, an attempt was not made to optimize the data set beyond selecting the best azimuth alignment of successive range gates. Although not tested during this exercise, a simple averaging of the multiple sweeps (subject to some kind of azimuth alignment reasoning) is highly likely to greatly improve the quality of data for stationary targets. Some kind of comparison of data from the two radar elevation settings probably could also be used to minimize terrain background response and to enhance man-made target response.

Numbers alone do not have the impact of graphics in transmitting information to the user. Therefore, several FORTRAN routines were written not only to apply metrics to these compressed data sets but also to display data and results of analyses in both two- and three-dimensional formats. All calculations for these studies were performed on a MicroVAX II 630QE computer system, while color graphics were generated on a Raster Technologies Model One/360 graphics display system.

Naturally, in range-azimuth space, each fine-range cell will be represented by a circular arc, and the entire test data set will be represented by circular segments like those shown on Figure 1. However, because of the somewhat limited capabilities of the graphics display system used for these studies and the very fine arcs required to represent each fine-range resolution cell, a conscious decision was made to display range-azimuth data in a rectangular format to prevent any loss of visual information. The drawback to this, as will be seen in a following chapter, is that one distorts the planar geometry and makes comparisons with the results of light model calculations more difficult than if both could be displayed in range-azimuth space. Although the shape of the data display in the rectangular format is not going to be correct, an effort was made to make the width/depth ratio for the displayed data the same as the azimuth/range depth ratio in the real data.

Another concern about how to best visualize the data and calculation results for each test is how to make certain that one test can be immediately compared with another. In other words, nothing done during the compression of data or the application of metrics to those data should change the relative magnitudes of the results. One should be able to look at a color display of power returns for test MS5502 and one for test MS6701 and be confident that what appears as a given color on one test is comparable with the same color on another test. To this end, some effort was made to determine the bounds of data and metric applications to all of the data before selecting a color bar. The absolute magnitudes of test data are meaningless because the data are uncalibrated.

An example of the data is shown on Figure 3, which contains three different representations of the measure of power returned to the radar from the terrain and targets at the site for test MS6603. On a linear scale, only a few features appear as bright colors representing strong returns. As will be seen later, however, these are not all man-made targets. This type of display is a kind of data thresholding, and is very much a function of the strongest signal within the scene. It would be a simple matter to defeat a sensor system based simply on the magnitude of power returned to a radar through the use of radar corner reflectors that are optimized for the wavelength in question. The accompanying three-dimensional representation of the linear data shows just how complex the terrain returns can be for this test site. It is not at all apparent that there are four man-made targets within this patch of natural terrain, three of which are totally in the open and one is camouflaged with brush. More will be said about this observation later. Terrain elevation data contained in Appendix C reveal that the low returns at the longest slant ranges are due to shadowing.

The preferred representation of data in the range-azimuth plane is logarithmic such as that shown in part (c) of Figure 3. Here it is apparent that there are several areas of strong returns and others that are either in shadow or that absorb most of the millimeter wave energy. The black ovals represent the approximate locations of target vehicles within this scene. Although many target detection algorithms probably operate in the linear domain, there appears to be much more informational content in a logarithmic display, particularly when one is trying to relate terrain features to measured data and the results of calculations. Note in the two-dimensional displays that a histogram of data values has been included. These will be significant in determining the quantitative relationships among various tests and will be further discussed in the next chapter.

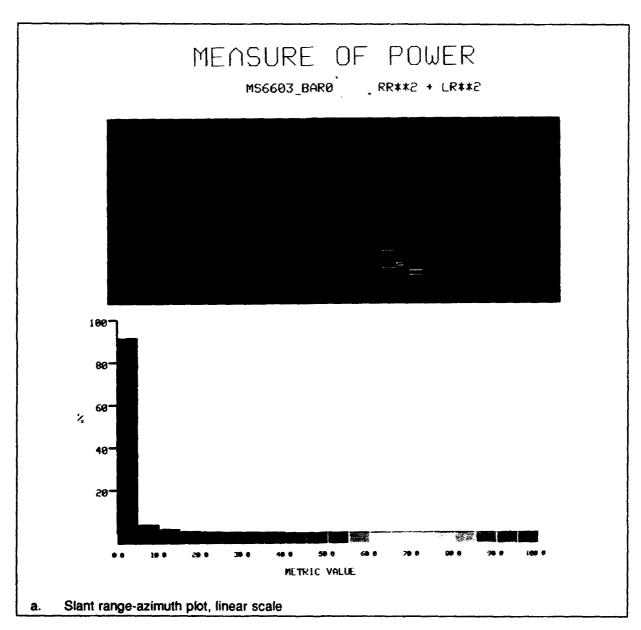


Figure 3. Measure of power returned from test MS6603 (Sheet 1 of 3)

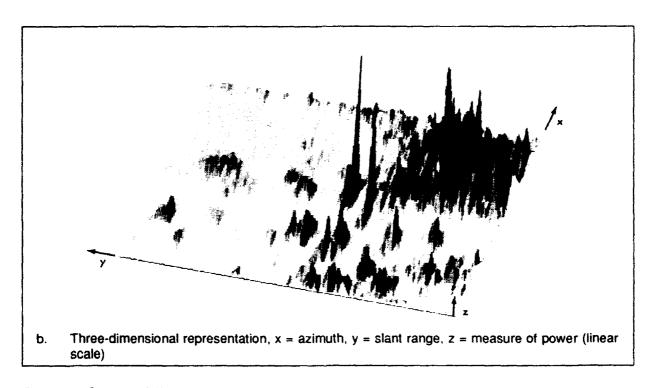


Figure 3. (Sheet 2 of 3)

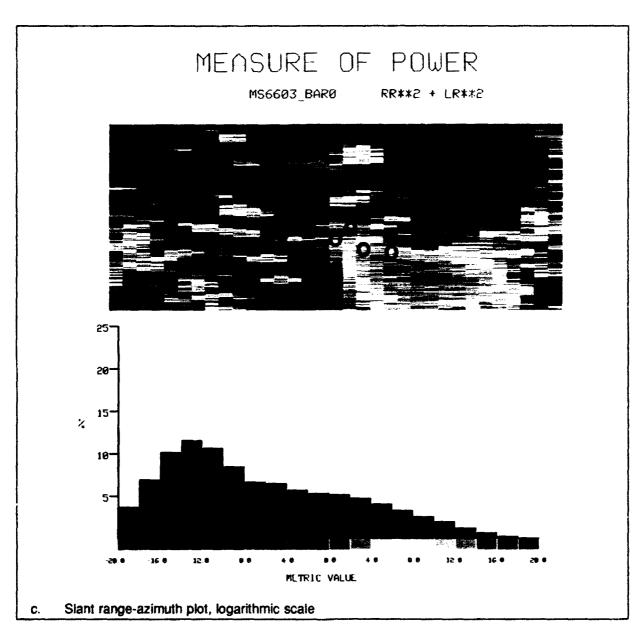


Figure 3. (Sheet 3 of 3)

#### 3 Metrics Approach To Quantifying Target-Like Features

#### **Philosophy**

Aided Target Recognizer (ATR) algorithms for modern sensor systems often begin the process of locating and identifying targets in cluttered backgrounds by eliminating substantial portions of the data that are not likely to contain real targets. This process, referred to as segmentation, usually involves the application of a gross (in a spatial sense) signal-to-clutter filter to coarse range profiles and assumes that man-made metallic targets produce strong returns compared with the natural backgrounds. Only after areas having high probabilities of containing a target(s) have been identified do the algorithms then process data at its finest spatial resolution to complete the search and identification procedure. To answer questions about the ability of natural target backgrounds to produce target-like features, one must not throw away any data. Thus the approach taken in these studies is to generate and retain the finest spatial resolution information that is available from these data.

It would be an enormous task (as well as an infringement on the proprietary nature of many sensor system algorithms) to apply all of the target feature algorithms to these data that are currently being used or being considered by ATR developers. Therefore, a decision was made to apply only the most commonly used and simplest features as a first step in tabulating statistics on the occurrence of target-like signatures in the MSFD test site backgrounds.

The basic approach, then, to quantifying the occurrence of target-like features in natural backgrounds is to first select several simple, widely accepted target filters, or metrics, for further study. These metrics are then applied to the finest resolution range profiles for a representative set of test site data, and the results are tabulated and stored in data files for further processing. Color graphics displays of the results are generated in range-azimuth space for qualitative interpretation. The metric, or filtered, data files are then analyzed using statistical routines, to determine moments of the histograms and other relevant information such as the relative positions of target data within the filtered data histograms. This latter step requires placing range windows over the known target locations and eliminating the target-related data from the background data to develop background-only histograms or to simply quantify the target signature with respect to the background.

#### **Target Feature Metrics**

Following numerous discussions with sensor developers, four simple target feature metrics were selected for application to the MSFD fine-range resolution test site data files. These are listed in Table 2 along with some comments about their general applicability. Even though the amplitude metric does not require any additional data filtering, it proves to be a strong indicator of target presence; as long as all of the test site data sets are properly range corrected, amplitude measurements from different sites and backgrounds can be compared.

Table 2 Simple Target Feature Metrics		
Metric	Definition	Comments
Amplitude	Measure of power for each fine-range resolution cell.	Appropriate for range corrected data. Most useful for quick-look, hot spot identification.
Signal-to-Clutter (S/C)	Ratio of average measure of power in a number of fine-range cells forming a target window to the average in a number of similar-size clutter windows. One buffer window is skipped on either side (in range) of the target window.	Data need not be range corrected if clutter window is not too large. Typical applications are region-of-interest identification and target-size S/C for detection.
Variance	Variance of signal (not measure of power) within a window of fine-range resolution cells. $\frac{n\sum x_i^2 - \left(\sum x_i\right)^2}{n\left(n-1\right)}$ where $x_i$ is the signal (voltage) amplitude returned from the $i^{th}$ fine-range cell.	An indicator of the presence of one or more strong scatterers. Data need not be range-corrected.
Polarization Ratio	Ratio of total measure of power in the left receive, right transmit channel to the power in the right receive, right transmit channel.	Man-made objects should exhibit strong, double (even) bounce behavior. Relatively smooth terrain should have strong, single (odd) bounce characteristics. Foliage should be neither. Large tree trunks and rock outcroppings are expected to cause problems.

There was some concern regarding how many range-resolution cells should be included in each metric. For example, the signal-to-clutter metric consists of a target window, a buffer window on either side of the target window, and a number of clutter windows outside of the buffers. After much experimenting with the size of these windows, a somewhat meaningful filter size was chosen that includes a 2-m target window, one 2-m window on either side, and four 2-m clutter windows outside of each buffer. Although this may not be the optimum arrangement from a sensor developer's perspective, it formed a reasonable tradeoff between spatial resolution and metric amplitudes. Larger size windows appeared to do nothing more than smear the results. Other filter sizes included a 10-m window for variance calculations and a 2-m window for calculating the ratio of even to odd polarization returns.

The procedure for applying each target feature metric (except for amplitude) was to set the filter at the shortest range for each azimuth, calculate the value of the metric, and insert that value into the fine-resolution cell at the middle of the filter. The filter was then moved out in range by one fine-resolution cell and the calculation performed again. This was repeated for each azimuth until the filter "bumped" into the farthest range cell. In this way, some data is lost at the near- and far-range edges of the range-azimuth data set.

#### Representative Results

#### Range-azimuth displays

Figures 4-7 contain graphics display results of the application of each target feature metric to the same test discussed previously, MS6603. Each figure contains the slant range-azimuth representation in both linear and logarithmic scales along with a crude histogram. Open circles added to the logarithmic displays approximately coincide with the locations of man-made targets at the test site.

Several observations are in order at this time.

- a. Of the four different representations of target feature metrics, only the polarization metric displays a log-normal distribution of terrain signatures. Power returns from natural terrain are often assumed to be distributed log-normally, but the power returned from this test site is most assuredly not log-normal. This observation, which is generally true for the other test sites, is probably due to a combination of low-grazing angles, relatively sparse vegetation, and the presence of small hills and depressions that result in numerous "shadows" within each test area.
- b. Returned signal strength and the amplitudes of filtered data alone are not enough to ensure the detection of man-made targets. An examination of all of the MSFD data reveals that if one knows where these targets are located, the data will often show a strong signature at about that point in space; but other numerous strong features appear to be caused by either the terrain or by man-made clutter within each test site. As for man-made clutter, a consensus exists among MSFD participants that all clutter was not adequately logged, and this study was initiated too long after the demonstration to gather any reliable information by revisiting the site.
- c. The polarization ratio concept is of no value whatsoever as a means of separating man-made objects from natural backgrounds. After some reflection on this question, it appears that even if one had an ideal target-size double-bounce object within the radar's instantaneous field of view, its effect on the returned signal would still be minimized because of the fact that the volume in space occupied by a fine-range cell and the half power beam width of the radar is large enough to result in a volume averaged response that is essentially depolarized. For this test case example, the half power beam width covers an arc with nominal length of over 30 m. The same argument could be made to account for why so-called target amplitudes are not greatly above those of the natural background in many test cases.

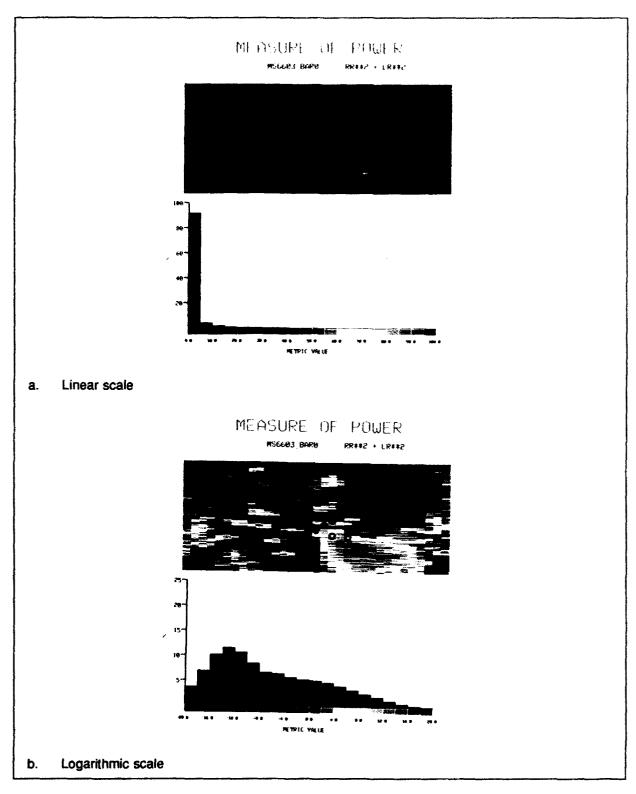


Figure 4. Range-azimuth displays of the "measure of power" metric, MS6603

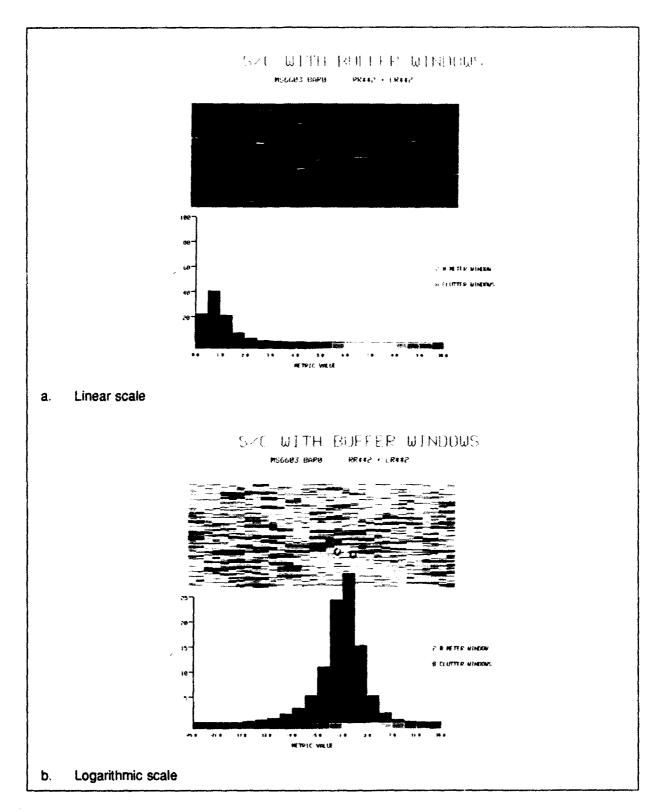


Figure 5. Range-azimuth displays of the "signal-to-clutter" metric, MS6603

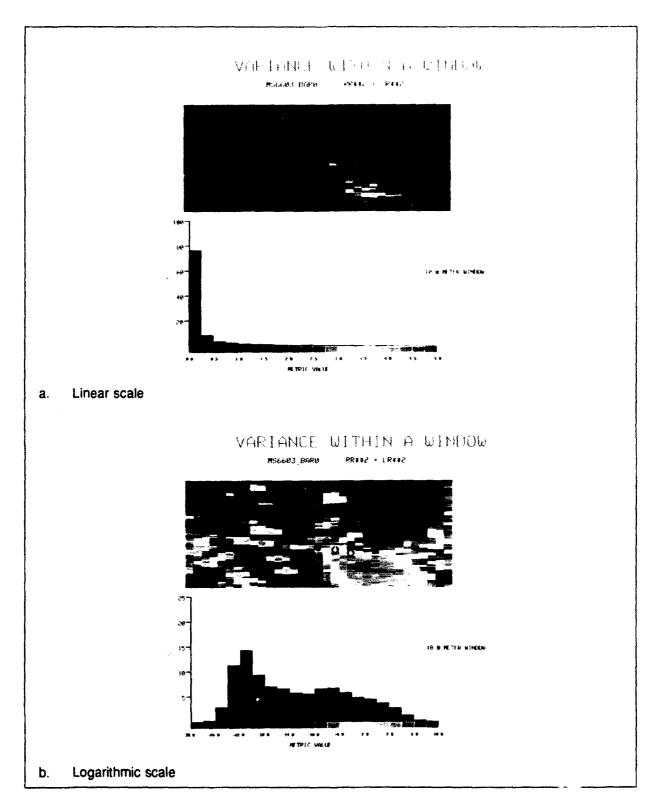


Figure 6. Range-azimuth displays of the "variance" metric, MS6603

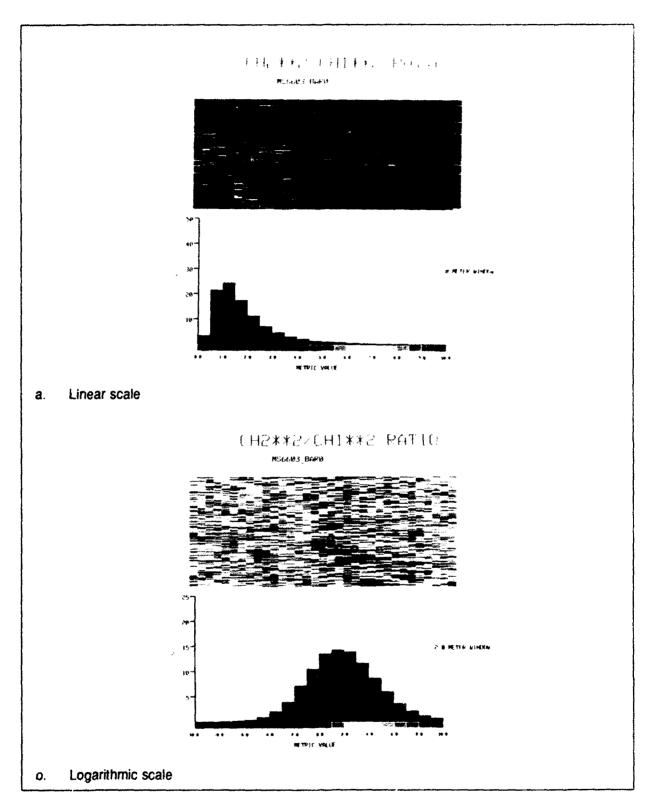


Figure 7. Range-azimuth displays of the "polarization" metric, MS6603

d. While all of the target feature metric examples shown are for MSFD data that are derived from sums of squares of measured voltages for the two different polarization combinations, the statistics will show that neither of the polarization combinations by themselves consistently performed better than the other when looked at from the target feature metrics perspective. This is a reflection of observation c.

#### Range profiles

Consider now another visualization of these target feature metrics, this time as a trace of the metrics along a given azimuth mark. Several of these range profiles are shown in Figures 8-10. It is obvious from the logarithmic representation of power for test MS6603 shown in Figure 4 that a man-made target should be quite apparent along azimuth mark 18 (the 18th vertical strip counting from the left); those profiles are shown on Figure 8. The apparent target position is indicated by the dashed line. Another target should exist along azimuth mark 21, but it appears to be obscured by strong foreground returns. Azimuth mark 21 profiles are shown on Figure 9. Finally, there are numerous significant returns from azimuth mark 24 where there should be no targets of interest. Its profiles are shown on Figure 10.

As with the two-dimensional maps, several observations are in order relevant to these one-dimensional traces.

- a. With respect to the target in azimuth mark 18, its measure of power does exceed all other returns along that profile. The other significant return at about range cell 530 is simply a spill-over from the target located in azimuth mark 17. At this point it is impossible to speculate as to the significance of the shape of this profile because not enough ground truth data exist to indicate whether the reduced returns on either side of the target are due to the shadowing effects from adjacent targets or dips and rises in the local elevation, or whether this is just a strong target signature superimposed on a flat terrain return. A closer examination of the target profile would have to deal with higher order target detection algorithms, anyway, and that was not the objective of these studies.
- b. Regardless of what influences the power profile data, application of the signal-to-clutter metric to a strong isolated return has to produce the characteristic profile shown on part (b) of the figure. For this target, under these test conditions, nothing in the background dominates the signal-to-clutter space quite like the real target. There is one minor anomaly at about range cell 900 that requires more ground truth than that available to explain.
- c. By its very definition, a calculation of the variance of a signal within some window is a measure of how extreme the variations in the signal are. One is therefore not surprised to see the strong signature in variance space because of this rather isolated and dominant target. Large shadows will cause the severe depression of the variance metric seen between range cells 900 and 1100.
- d. Even for the well-defined target in azimuth mark 18, the polarization metric did not reveal any anomalies, as expected.

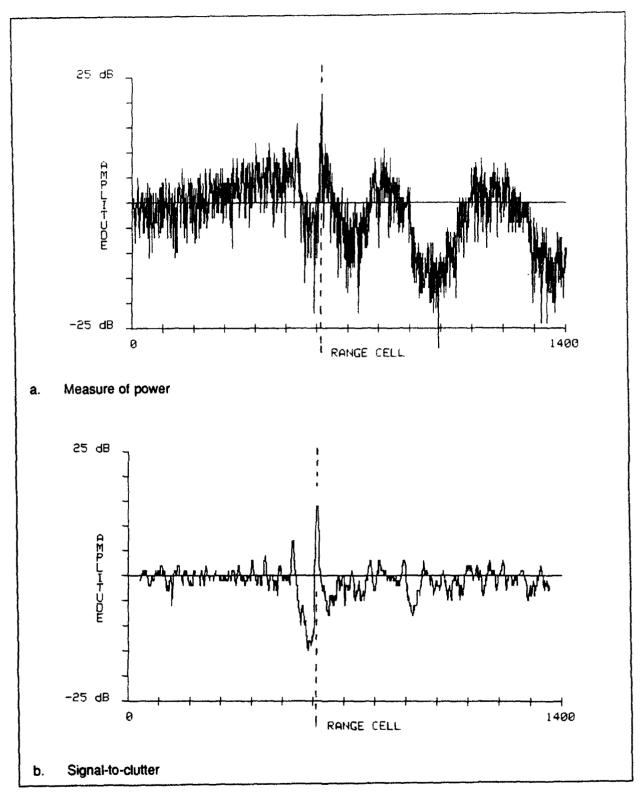


Figure 8. Range profiles for target metrics, azimuth mark 18 (Continued)

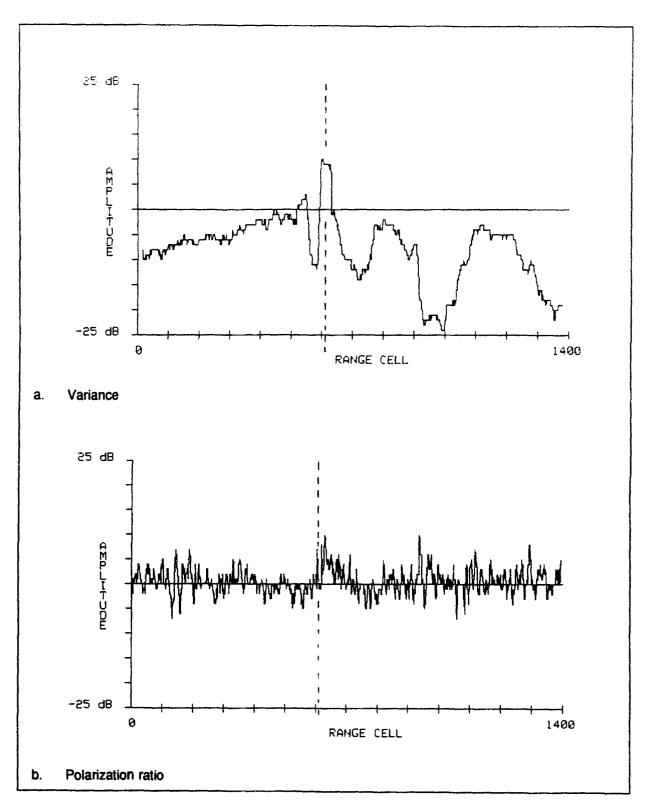


Figure 8. (Concluded)

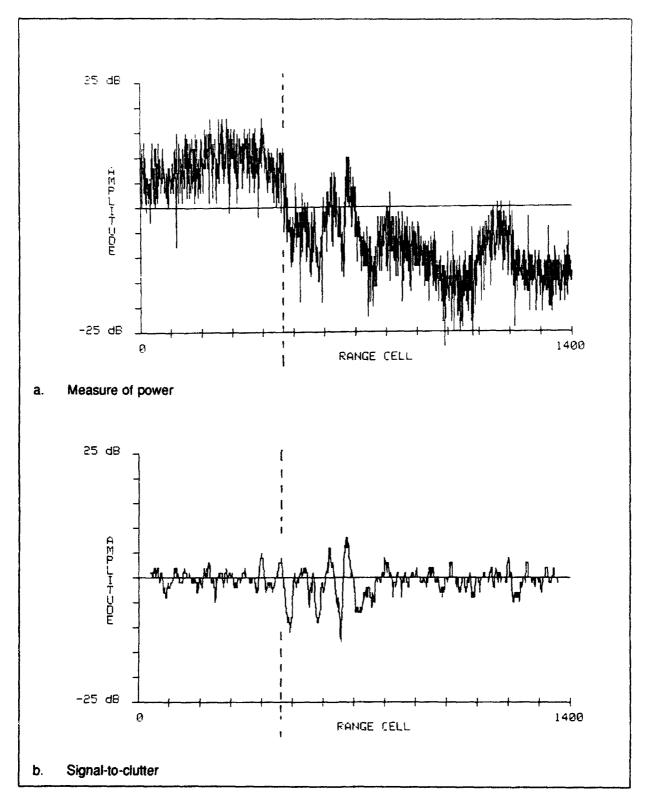


Figure 9. Range profiles for target metrics, azimuth mark 21 (Continued)

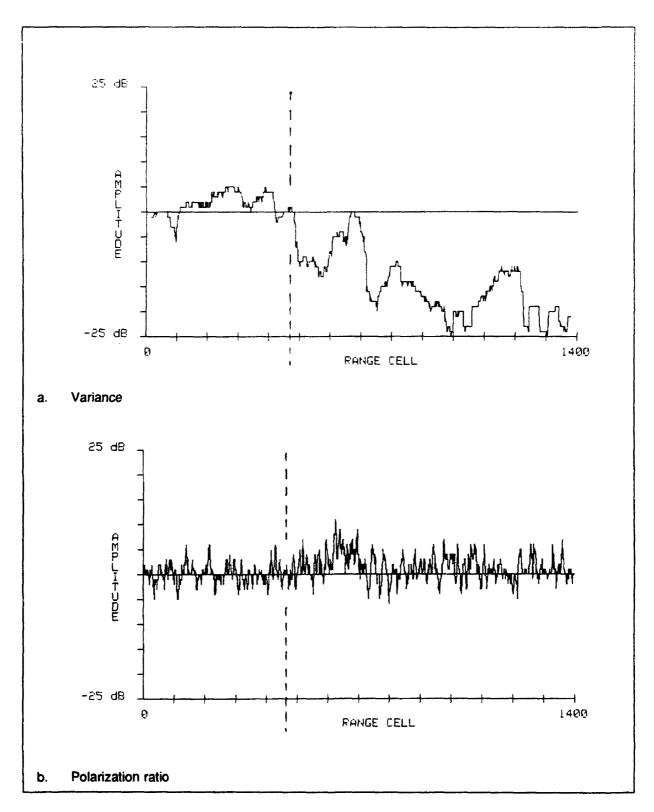


Figure 9. (Concluded)

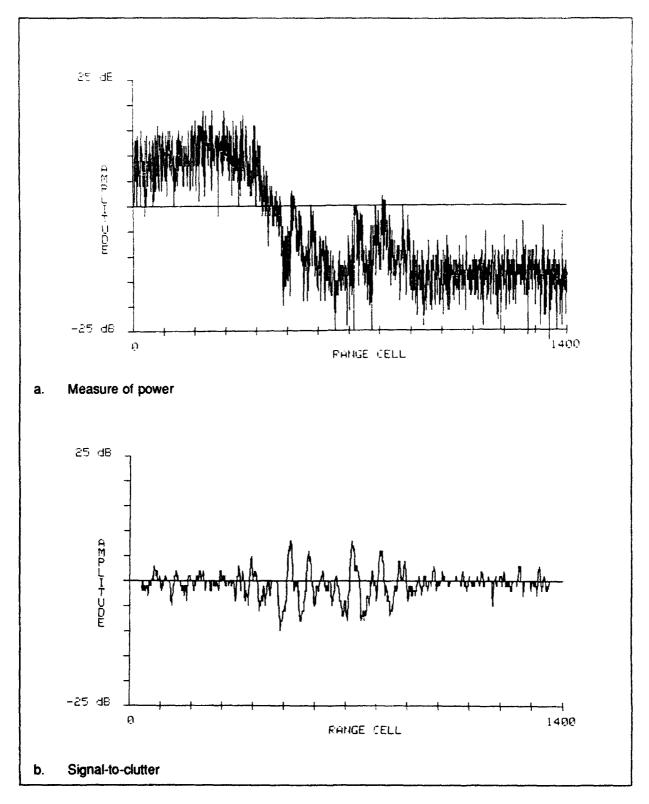


Figure 10. Range profiles for target metrics, azimuth mark 24 (Continued)

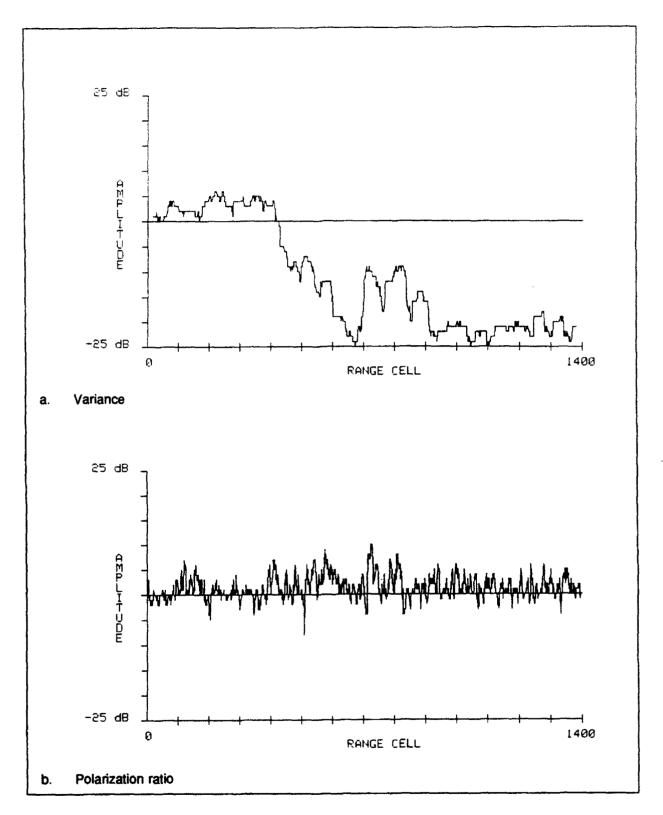


Figure 10. (Concluded)

- e. Whereas the strong target signature on azimuth mark 18 was very isolated, the target location on azimuth mark 21 does not stand out in any of the target feature metric profiles. The test summary indicates that this target should have been in the open but was turned at an angle to the radar. In other words, target signatures are not always the strongest signatures on any given profile. In fact, almost everything in the foreground of this target gave stronger returns. It will be shown later that the strong foreground signals can be attributed to terrain geometry and vegetation.
- f. Finally, consider the target feature metric profiles shown on Figure 10 for azimuth mark 24. Without further ground truth information, it appears that there are no man-made targets along this profile, but, at least in the signal-to-clutter domain, there are strong indications of target-like features between range cells 500 and 900. The very elevated power measurements within the first 400 range cells are uniformly high and produce no target-like features. It appears that anything within the natural terrain that could cause a short range jump in power return could produce a target-like signal-to-clutter response. Within the terrain at Fort Hunter Liggett, such behavior could be the result of the isolated trees at each test site.

#### **Statistics**

During early discussions with the AATD staff, it was suggested that by taking a hard look at a good set of existing data and applying the metrics analysis approach, a quantitative way might be developed to characterize a given test site within a given portion of the spectrum. After a great deal of effort was expended on this task, the conclusion to date is that a simple, clean way of quantifying a test site through the "eyes" of a given radar system has not been found. There are, however, hints that such an approach might still work. Ideally, what would be required is well-documented data from other geographical locations that were collected using the same sensor system. Such data do not exist. Nevertheless, the following observations derived from statistical analyses may prove useful for future measurement and analysis programs.

Global target prominence. Literature on imaging ATR systems<sup>1</sup> has defined a metric concept which quantifies the conspicuity of a target portion of an image relative to the entire image. This is referred to as a "global target prominence" (GTP) and is measured by determining the percentile location of a target feature value relative to the histogram of this feature for the entire image or for the portion of the image devoid of targets. This is illustrated in Figure 11. GTP is interpreted as the portion of the image less conspicuous than the target for a specific feature. Values range between 0.0 and 1.0. A value of 1.0 indicates that the target has a higher feature value than anything in the image; conversely, a value of 0.0 indicates that the target has a lower value than anything in the image. This concept is directly adaptable to the radar features used in this study.

Table 3 contains average GTP values for each of the radar target feature metrics. The "all data" column represents the average of target prominences when the target data is considered as part of the histogram for each test. The "backgrounds only" column uses histograms for which the target signatures have been masked. What these numbers say is that the targets, in general, are among the dominant features within all of the test sites. However, given the number of fine-range cells

<sup>&</sup>lt;sup>1</sup> J. Beard, L. Clark and V. Velton. (1985). "Characterization of ATR performance in relation to image measurements," unpublished paper, AFWAL/AARF, Wright-Patterson AFB, Ohio.

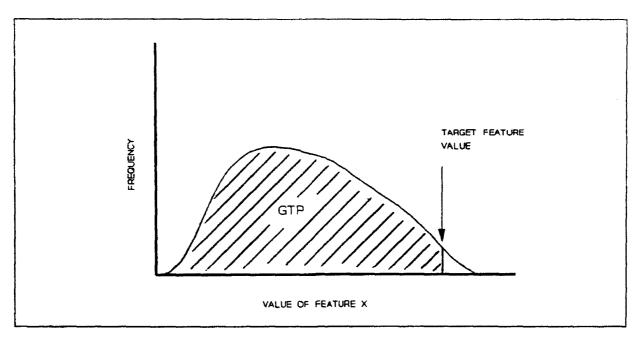


Figure 11. Graphical representation of global target prominence (GTP)

Table 3 Average Global Target Prominence (GTP) of Radar Features  (Based on 88 Targets in 24 Scenes; Total Measure of Power Data)			
Power	0.994	0.994	
Signal-to-Clutter	0.990	0.990	
Variance	0.973	0.975	
Polarization Ratio	0.925	0.925	

contained within each test site data set, there are still a large number of other features whose signatures are equally as strong.

Cumulative histogram inferences. One of the most promising approaches to quantitatively characterizing test sites with respect to a given radar sensor was to look for predictable patterns in the histograms of measured and filtered data. The following figures and paragraphs contain some observations regarding the cumulative histograms of measure-of-power data for all of the test sites contained within this study.

Figure 12 contains all of the MSFD test site cumulative histograms presented on a logarithmic scale. There is no obvious clustering of these curves that could be attributed to something unique about the terrain at different sites within Fort Hunter Liggett. In fact, disregarding the two anomalous responses from tests MS6701 and MS5803, all of the remaining test results for power measurements are quite closely clustered. There are, however, a couple of observations worth noting.

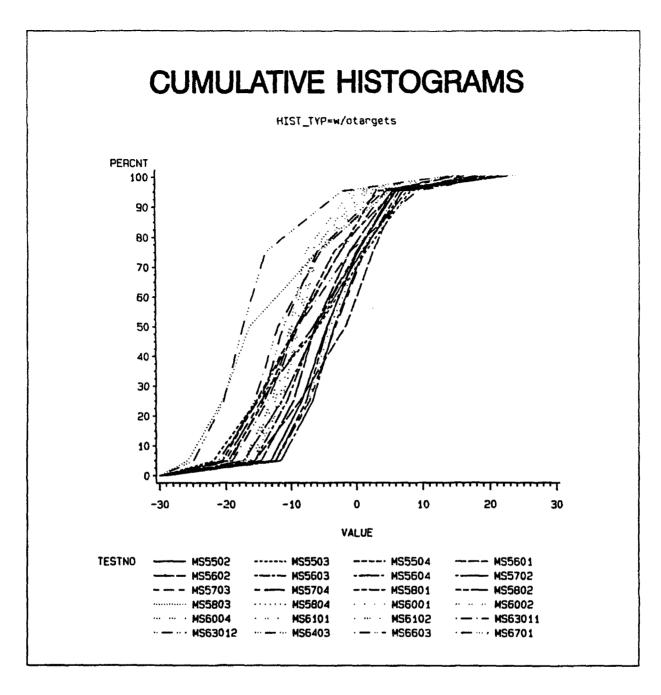


Figure 12. Cumulative histograms of power data (all tests)

Figure 13 is another plot of cumulative histograms for test sites whose average range is different from all of the others. In a gross sense, increasing range to the test area appears to cause a shift to the right in the cumulative histogram. The net result of such a shift is to decrease the extremes of contrast within the test area that could, in turn, lead to less apparent target signatures. All of this could be explained by the large range cell volume averaging concept discussed earlier. When one combines a strong target signature with a larger number of worker background signatures, the resulting average tends toward the weak background levels.

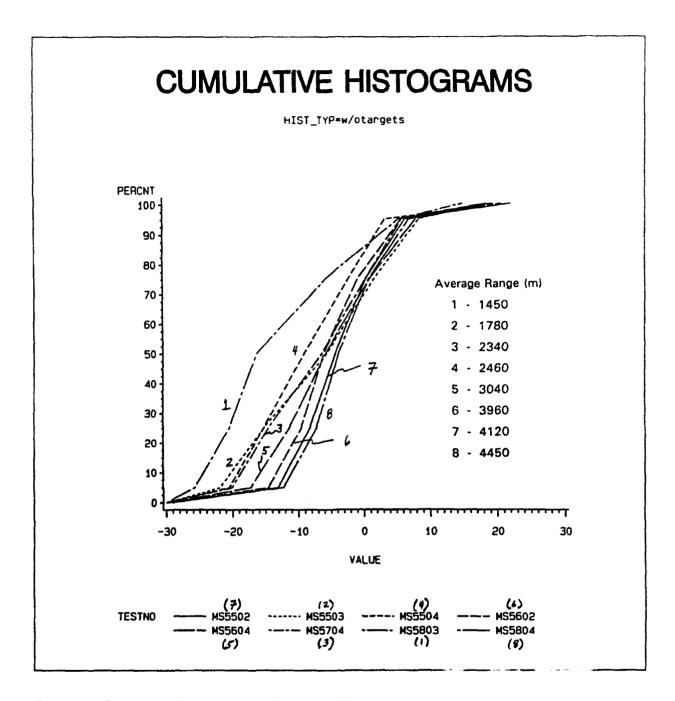


Figure 13. Cumulative histograms showing range effect

The final observation in this section on statistical perspectives is that the data collected at Fort Hunter Liggett do appear to be quite repeatable. Figures 14 and 15 show the histograms of tests whose target arrays were located at about the same position relative to the radar but whose data were collected at different times of the day varying from predawn to the middle of the afternoon. This clearly shows, also, that environmental factors such as air temperature and relative humidity changes within reasonable limits have little effect on radar measurements taken during MSFD. There is some temptation to attribute the differences between the histograms shown in Figures 14 and 15 to gross differences in weather conditions, as the data represented on Figure 14 was collected during heavy fog

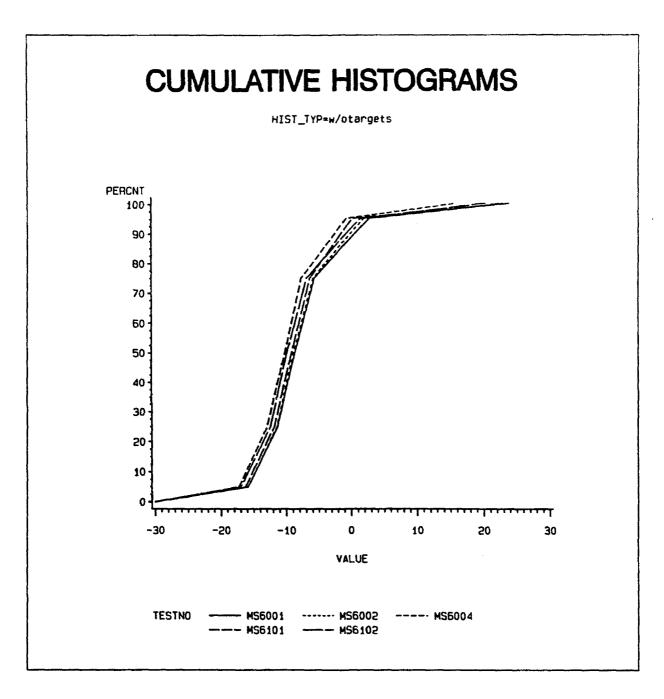


Figure 14. Cumulative histograms showing repeatability (heavy fog)

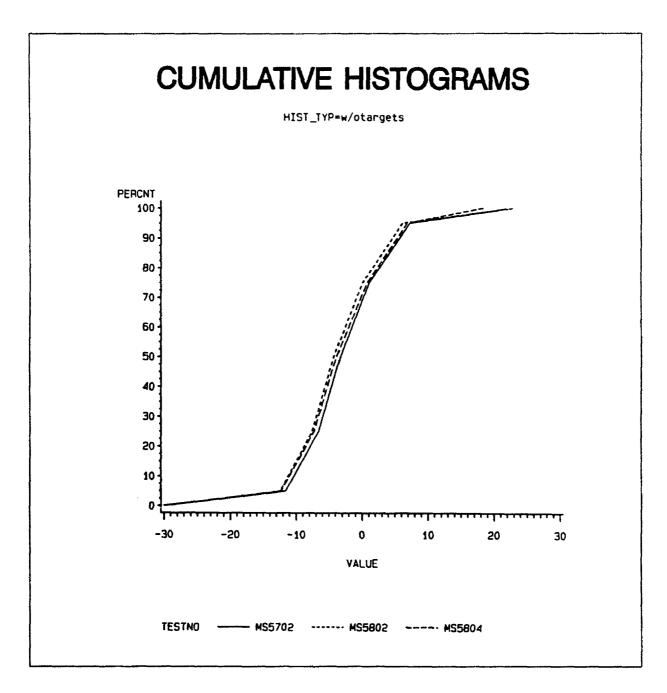


Figure 15. Cumulative histograms showing repeatability (moderate weather conditions)

conditions and those shown on Figure 15 to a more moderate set of relative humidity conditions. However, the magnitudes of the data do not support that contention. Water will tend to absorb and forward scatter the radar energy. If moisture was the controlling factor in the difference between these two groups of tests, then the data in Figure 14 should be shifted to the left of the data in Figure 15, and that is not the case. The range effects noted above seem to be the best argument for the differences.

## 4 Backscatter Modeling and Discussions of Terrain Effects

### A Simple Backscatter Prediction Model

The second approach taken in these studies of characterizing the interaction of the MSFD test site backgrounds with the radar sensors was to develop and exercise a simple backscatter prediction model to qualitatively assess the impact of terrain geometry on measured data. In other words, "How much of the radar return can be predicted by some reasonable knowledge of the test site surface geometry?" This was thought to be a particularly relevant question for the MSFD because of the relatively clean environment of the tests compared with what might exist at test sites in other temperate parts of this country or in western Europe, or even Central America.

The backscatter model developed consisted of the following elements that are schematically drawn on Figure 16. First of all, available 25-m terrain elevation data were converted into a three-dimensional finite element surface of triangular facets for which vectors not real to each facet are easily computed. Next, a point light source was positioned at the location of the radar system (either the high site or the low site), and the angle,  $\phi$ , between the light source and the normal vector to each terrain facet was computed. Under the assumption of Lambertian scattering, the intensity (or power) of the backscattered light was calculated to be proportional to the cosine of this angle.\(^1\) A ray-tracing scheme was developed to ensure that terrain facets that could not be seen by the radar would not produce a returned signal. Because none of the available Geographic Information System packages available at WES possessed a finite range point light source simulation capability, this software package was developed by the first author.

The point light source simulation of a radar is reasonable, because light energy and radar energy are the same physical phenomenon; they differ only in frequency. The Lambertian assumption for scattering is not unreasonable, because at the frequency of operation of this radar system, the terrain surface is certainly rough. Ultimately, the acid test for this model is its comparison with real data. Results indicate a strong correlation between the two.

Representative results for this simple backscatter prediction model are shown on Figures 16-18. First of all, Figures 16 and 17 show the terrain backscatter predictions for the entire areas within which MSFD tests were conducted, with Figure 16 depicting the radar located at the high site (Site 8)

<sup>&</sup>lt;sup>1</sup> M. Born and E. Wolf. (1980). Principles of optics. 6th Edition (with corrections), Pergamon Press, Inc., Oxford, UK.

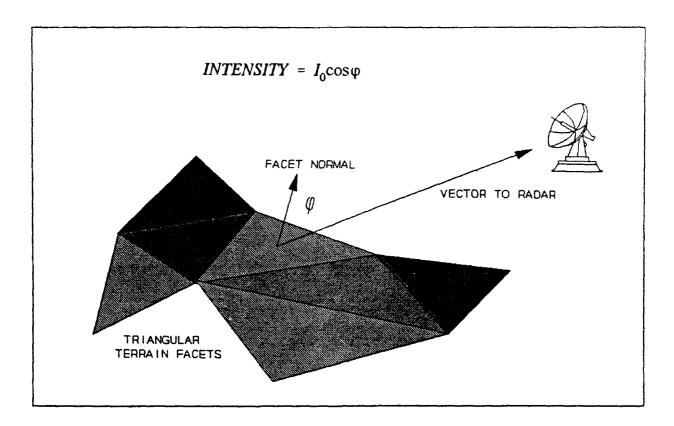


Figure 16. Schematic of the backscatter model

and Figure 17 showing results for the radar located at the low site. There is a black dot on each figure at the location of the radar, and 40-ft contours are superimposed on the figures. The simple model predicts intensities that vary between 0.0 and 1.0 in magnitude. These results were then converted to a 40-db range (which is comparable with the range of measured data) and displayed with the same color bar used for the displays of target feature metric calculations shown in the previous chapter. Even on the gross scale of these figures, it is readily apparent that the model behaves correctly in the sense that steep slopes visible to the radar cause strong backscatter returns and that terrain that cannot be seen by the radar is placed in shadows (white background on these figures to facilitate viewing of the elevation contours).

But the real question is whether or not the model can qualitatively simulate the measured data at each test site, thereby establishing that surface geometry is a major contributor to the test results at MSFD. Returning once again to the same test for which results have already been discussed in previous chapters, Figure 18 contains a comparison between measured data and predicted results using the simple backscatter model. When viewing these images, keep in mind that the measured data were displayed on a rectangular format, while the outline on the simulation results depicts the polar nature of the radar operation. A similar set of figures is shown in Appendix A for each MSFD test. They all demonstrate a strong correlation between predictions based on simple surface geometry and reflectance models and the actual data measured by the radar. For example, note that on Figure 18 strong returns were measured by the radar and displayed on the lower right hand area of the range-azimuth plot that could not be attributed to the presence of any man-made objects. The simple backscatter model predicted the same area of strong returns because of the fact that the terrain surface is nearly normal to the radar at that location. In fact, most of the significant features of the test site radar response are

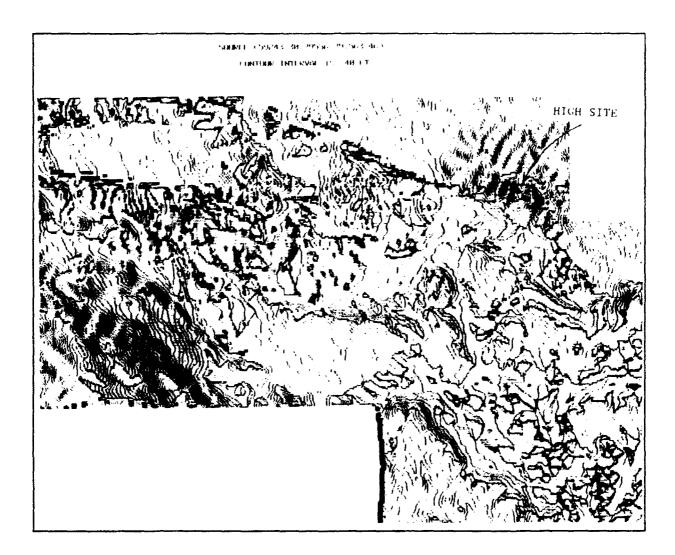


Figure 17. Backscatter model predictions for the high site location

qualitatively simulated by this simple reflectance model. Hill slopes facing the radar are illuminated, and shadows exist where depressions in the terrain have been measured.

### **Vegetation Overlays**

Also shown on Figure 18 is a 10-ft contour map with a vegetation overlay. This was produced by enlarging a set of aerial photographs of the MSFD test areas taken within the next year after the demonstration was conducted to the same scale as the measured data and prediction displays. A contour map was generated on a transparency and laid over the aerial photo. As can be seen by the site photographs contained in Appendix A, the crowns of the trees and other significant vegetation are easily recognized and were simply colored in on the transparency. Such an overlay would probably be most useful for those test sites where the terrain geometry was not such a strong contributor to the backscatter signal as is true for MS6603.

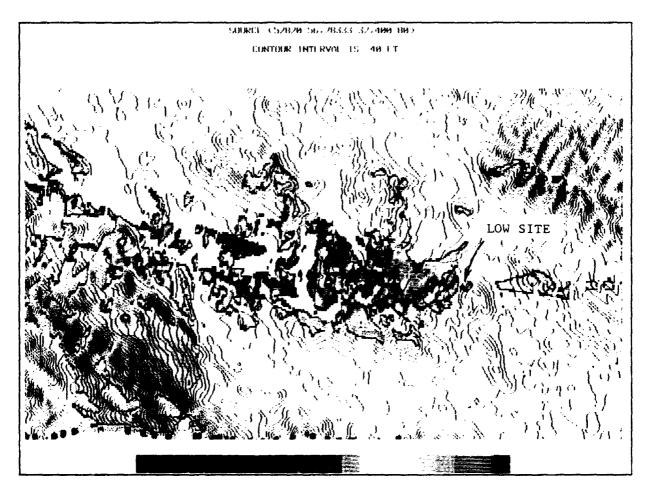


Figure 18. Backscatter model predictions for the low site location

# MLASURE OF POWER RR\*\*2 + 1R\*\*2 MS6603\_BAR0 Measured data **Backscatter predictions** b. Vegetation overlay

Figure 19. Backscatter prediction results and vegetation overlay for test MS6603

## 5 Summary and Recommendations

In an attempt to develop a scene characterization methodology for long-range (2 to 7 km), low-grazing angle (less than 10 deg) active millimeter wave radar systems, a twofold approach was taken. First, slant range versus azimuth maps of radar backscatter measurements were filtered using the target feature metric technique to collect statistics on the occurrence of target-like features and to relate those signatures to natural terrain conditions. Second, a prediction of radar returns from the terrain was modeled by a point light source at the radar location and the assumption of Lambertian scattering from the terrain facets. Model predictions were combined with overlays of vegetation at each test site and compared qualitatively with the measured data to assess the impact of terrain conditions on backscatter response.

Application of these analysis tools to the Martin Marietta radar data collected during the MSFD resulted in the following observations:

- a. Man-made targets within the terrain backgrounds found at Fort Hunter Liggett are reasonably easy to locate in range-azimuth "images" when their positions are known, but might not be easily found by automated methods applied to either raw data or filtered data because of the strong target-like returns from the terrain at some test sites.
- b. Not enough data on different types of target backgrounds are available from the MSFD trials to develop an effective statistical tool for quantifying background conditions for differing terrain conditions. The use of cumulative histograms for achieving this objective is still a potential tool, but more data from different backgrounds and collected with the same radar system is needed to pursue this train of thought.
- c. A simple point light source model with assumed Lambertian scattering qualitatively correlates very well with observed data. Vegetation overlays serve to enhance that correlation. This implies that for the type of terrain offered by the Fort Hunter Liggett test sites, even crude surface geometry models and vegetation overlays will explain much of the background response.
- d. Many questions about the impact of terrain on radar returns under the conditions stated above remain unanswered in part because of insufficient supporting data. Future tests in which radar data will be closely studied must include more comprehensive ground truth measurements. For example, had it been known prior to the execution of the MSFD that a detailed look at the radar data was going to be taken, a complete set of low-altitude, oblique, high-resolution color photography and video of all of the test sites could have been collected (from at least two of the

cardinal directions). This would have answered any questions about vegetation conditions or about the occurrence of man-made clutter and such natural features as rock outcroppings.

Having developed the data management and analysis tools for this study, it would be relatively easy to test other higher order target feature metrics. In fact, a database now exists for this one set of terrain conditions to take a closer look at existing target detection algorithms or to develop and test new ones. One very straightforward task that could be undertaken and that would require nothing more than to revisit these existing data would be to examine the impact of averaging multiple azimuth sweeps or comparing results from different elevation settings as suggested in Chapter 2.

In the area of modeling, it appears from the simple exercise conducted within this study that modifications of the point light source model could yield a valuable tool for predicting terrain signatures. Examples of such modifications would include more realistic scattering assumptions from grass-covered terrain and a coupling of tree and bush spatial information with a separate module for estimating an average backscatter from each species.

## **Appendix A Scene Metric Statistics**

The following pages contain a summary of common statistics for the log-scale histograms associated with each of the 24 MSFD radar scenes. There is a table for data that represent the total power returned to the radar receiver (BAND=total power) as well as a table for the power measured on the right receive-right transmit channel (BAND=polarization RR) and for power measured on the left receive-right transmit channel (BAND=polarization LR). Each of these tables has, in turn, separate sheets for each radar target feature metric (METRIC=measure of power, METRIC=signal to clutter, METRIC=variance). The final table summarizes results for the polarization ratio metric (BAND=LR/RR, METRIC=polarization ratio).

RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

test	elevetion.		standard				ş	-52	i	•	75-	95-	
e	setting		deviation	skewness	kurtosis	minimu	percentile	percentile	median	₽ DOE	percentile	percentate	mex imm
455502	c	-4.00	20.10	0.1166	-0.2174	-28,10	-13.10	-8.30	-4.30	-6,80	0.30	6.30	22.00
2022		-6.50	13.60	-0,0481	-1.0280	-30.00	-21.90	-15.30	-5.60	0,40	1.60	8.40	18.50
485504		08	13.30	0.0105	-0.9670	-30.00	-20.50	-15.30	-9.10	-14,80	-2.30	3.20	20.80
\$5801		-3.00	19.70	-0.4626	-0.5383	-30.00	-15.60	-8.60	-1.50	06.0	2.70	7.10	16.60
MS 5602	, ,	-5.30	18.50	0.2447	-0.1914	-30.00	-14.60	-9.60	-6.10	-7.80	-0.90	5.70	18.30
\$5603		-5.30	17.70	0,1061	-0.6600	-30,00	-15.60	-10.60	-6.10	-9.60	0 . 40	6, 10	19.60
VS 5604	-	-5.30	16.80	0.1198	-0.6948	-30.00	-17.30	-11.40	-5.80	-10.10	08.0	7.90	19.40
\$5702		-2.80	21.60	0.1563	0.0194	-30.00	-11.60	-6,60	-3,20	-4.80	1.10	7.30	22.90
\$5703	0	-3,00	21.10	-0.0628	-0.1584	-29.80	-12.40	-7.10	-3.00	-1.50	1.30	6.70	17.90
185704		-7.30	14.20	-0.0580	-1.0781	-30.00	-20.10	-14.60	-6.40	-15.90	0.30	5.80	14,80
455801		-8.40	13.80	0.3685	-0.2926	-30.00	-18.60	-14.10	-9.10	-13.10	-3.20	6.20	18.00
55802		-3.80	20.60	0.1842	0.0732	-30.00	-12.40	-7.60	-4.20	-5,30	0,10	6.20	22.80
\$5803		-13,30	7.00	0.6317	-0.5635	-30.00	-25.80	-20.50	-16.30	-30.00	-5.80	5.30	19.10
485804	-	-3.30	20.80	0.1757	-0.0809	-30.00	-12.30	-7.30	-3,80	-4.20	08'0	6,90	18.40
K6001	• -	-8.10	16.50	0.7916	1.7457	-30,00	-15.90	-11.30	-8 60	-8.40	-5.60	2.80	24.00
48 6002		-8 40	16.40	0.6645	1,4655	-30,00	-15.90	-11.40	-8.60	04.6-	-5.80	2.00	23.00
£\$6004	• •	06 6-	15.10	0.6760	1.8995	-30.00	-17.30	-12.90	-10.10	-9.10	-7.60	-0.60	15,90
126101	0	-8.90	16.20	0.5507	1.6237	-30.00	-16.30	-11.80	-9.10	-9.40	-6.30	0.30	23.60
456102	-	-9.30	15.40	0.7729	1.7452	-30.00	-17.00	-12.40	9.80	-10.30	-6.80	1.50	20.40
4563011	•	-8.60	13.30	0.0486	-0.7582	-30.00	-21.10	-15.10	-8.80	-15.80	-2.30	6.70	14.10
4563012	•	-9.90	13.30	0.6631	0.2613	-30.00	-19.30	-14.40	-11.10	-13.10	-5.80	3.80	15.60
\$5403	0	-16.30	7.10	1.1072	1.5863	-30.00	-24.90	-20.30	-17,30	-18.00	-13.80	-2.00	13,90
£S6603	•	-7.10	14.20	0.4953	-0.4617	-30.00	-19.00	-13.60	-8.80	-13,30	-0.80	9.30	21.50
1000	•	01 01	20 00	0.6030	0000	-30 00	-20 60	-15.60	-11 90	-14 40	-5.30	07.4	21,60

RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

----- BAND-total power METRIC-signal to clutter

4	alevation		standard				ņ	25-			75-	95-	
e	setting	the ear	deviation	skemess	Kurtosis	minim	percent11e	percent11e	median	mode	percentile	percentile	maximum
WS 5502	0	-0,60	27.20	-0.3859	3,4487	-15.30	-4.30	-1.60	-0.30	-0.30	06.0	2.80	19.30
WS 5503	6	-0.40	27.50	-0.5031	3,2231	-17.00	-3.80	-1.50	-0.30	-0.40	0.0	3.00	10.90
MS 5 50 4		-0.30	27.70	0.0580	1.6498	-10.40	-3.30	-1.50	-0.30	04.0-	08.0	3.00	14.90
MS \$501		0, 0-	27.40	-0.4718	1.6200	-12.40	-4.00	-1.50	-0.30	-0.10	1.00	3.00	8.10
MS 5602		-0.60	27.00	-0.5118	1.6943	-14.90	-4.80	-1,80	-0.30	-0.60	0.90	3.00	11.90
MS 5503		-0.40	27.50	-0.2906	3.5458	-16.80	-3.80	-1.50	-0.30	-0.60	06.0	3.00	16.10
MS 5604		-0.80	26.50	-0.4061	1.9134	-17.30	-5.30	-2.20	-0,60	-1.10	0.80	3.50	13.30
MS 5702	۱	-0.40	27.60	-0.1027	1.6041	-12.10	-3.80	-1.50	-0.30	-0.60	0.90	2.80	12.60
MS 5703	0	-0,60	27.20	-0.1780	1,2625	-12.90	-4.30	-1.80	-0.30	-0.60	0.90	3.30	11.40
MS 5704	· (c	-0.30	27.80	-0.3878	1.7609	-17.00	-3,30	-1.40	-0.30	-0.60	06.0	2.70	7.20
MS 5801	. ~	-0.90	26.10	-0.5079	2,5398	-17.40	-6.20	-2.20	-0.60	-0.30	0.90	4.00	13.60
MS 5802		-0.40	27.60	-0.2671	1.4327	-12.40	-3.70	-1,50	-0.30	-0.20	06.0	2.70	10.90
MS 5803		-1.30	25.00	-0.1140	1.4213	-20,00	-7.40	-3.00	-1.10	-1.10	0.80	5.80	16.10
MS 5804		-0.60	27.40	-0.1832	2.4962	-12,60	-3.80	-1.60	-0.30	-0,40	06.0	2.80	17.60
HS6001		-0.60	26.90	-0.4724	2.7858	-14.10	-5.20	-1.60	-0.30	-0.20	0.80	3.30	14.90
MSE002		-0.60	27.00	-0.7061	4.0231	-17,40	-4,70	-1.50	-0.30	0.10	06.0	3,00	14.60
PES 5004	. 0	-0.40	27.30	-0.1393	2.5867	-14,10	-4.10	-1.50	-0.30	-0.80	06.0	3.30	12.90
MS6101	0	-0.40	27.30	-0.5255	5.3425	-18.90	-4.10	-1.50	-0.30	0.10	0.90	2.80	19.10
MS6102	-	-0.60	26.90	-0.5691	3.5286	-18.80	-5.30	-1.50	-0.30	0.20	06.0	3.00	13.10
MS63011	• •	-0.80	26, 10	-0.5894	2.7894	-17,10	-5.80	-2.30	-0.60	-0.60	06.0	3.70	17.40
MS63012	0	-0.90	25.90	-0.4176	2.3645	-17.50	-E.40	-2.30	-0.80	-0.80	0.90	00.4	17.80
MS6403	0	-0.80	26,50	0.6199	1.4850	-12,60	.4.60	~2.30	-1.00	-1,40	0.40	5.20	15.60
MS6603	•	-1.10	25, 50	-0.6575	2,1034	-17,60	-7.40	-2.50	-0.60	-0.80	0.90	4.00	17.00
MS6701	0	-1.50	24.60	-0.2589	1.1668	-20,50	-8.40	-3.30	-1.30	-1.30	0.80	5.40	18.80
	•	;											

RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

test	elevation setting	i e	standard	sk away	Furtonia	mtnim	5- nercentile	25- nercentile	ne then	•pou	75- nercentile	95- nercentile	mextmus.
<b>:</b>													
MS 5502	o	-11.10	13.40	0.2301	-0.8827	-22,00	-18.80	-16.10	-10.90	-17.40	-6.70	-2.30	8.60
MS 5503	0	-13.30	7.70	-0.1115	-1.2751	-30.00	-26.90	-22.40	-11.60	-23.90	-5.40	0.20	5.80
MS5504	0	-15.80	7.40	0.0401	-1.4210	-28.90	-25.10	-22.00	-14.90	-22.00	-8.10	-5.80	5.30
MS5601	0	-9.80	13.50	-0.7526	-0.7483	-25.00	-22.00	-14.80	-7.30	~5.80	-5.20	-2.30	3,80
MS5602		-12.30	12.30	0.4892	-0.8397	-22.50	-18.30	-16.90	-13.40	-16.50	-7.80	-2,50	5.80
MS 5603	0	-12.40	11.20	0.2424	-1.2748	-24.00	-20.50	-18.50	-12.90	-18.80	~6,70	-2.50	7.10
MS 5604		-11.60	11.50	0.1654	-1.0176	-26.40	-21.90	-17.50	-11.90	-18.90	-5.90	-0.60	7.20
MS 5702	1	-9.90	15.20	0.4903	-0.5457	-20.00	-16.30	-14.10	-10.40	-14.80	-6.20	-1,30	8.40
MS5703	•	-9.80	15.20	-0.0206	-0.7626	-21.40	-18.00	-13.60	-9.60	-9.30	-6.10	-1.80	3.20
MS5704	6	-14,40	7.60	-0.1042	-1.5368	-29.10	-25.30	-22.90	-12.30	-23.40	-7.30	-3.30	1.30
MS 5801		-14.40	8.70	0.5087	-0.5441	-29.00	-24.00	-19.50	-15.30	-18.80	-10.10	-1.10	5.70
MS5802	~	-11.10	14.00	0.5367	-0.4117	-20.40	-17.50	-15.30	-11.60	-16.30	-7.60	-2.50	8.60
MS5803	~	-17.90	3.40	0.5400	-0.8744	-30.00	-29.40	-24.10	-20.80	-30.00	-10.40	-2.00	4.30
MS 5804	,-4	-10.60	14.30	0.3709	-0.8008	-21.00	-17.50	-15.10	-10.90	-16.30	-6.60	-1.80	6.20
MS6001		-14.90	10.00	1.6733	2.3573	-23.00	-19.60	-18.00	-16,50	-17,60	-13.60	-2.50	9.10
HS 6002	٥	-15.40	9.60	1.5682	1.9477	-24.40	-20.00	-18.50	-17.30	-17.80	-13.80	-4.30	8.10
MS5004	D	-16.90	9.10	1.8222	3.3802	-23.80	-20.90	-19.30	-17.90	-18 30	-15.90	-6, 60	2.50
MS6101	0	-15.90	9.80	1.8383	3,6877	-23.00	-20.00	-18.50	-17.30	-18.80	-14.90	-6.20	8.60
MS6102	-	-16.50	8.20	1.6357	2.0067	-24.80	-21.30	-19.90	-18.50	-19.10	-15.10	-3.70	5.90
MS63011	0	-14.90	8.10	-0.0302	-1.0956	-30.00	-26.00	-21.00	-14.60	-5.80	-8.60	-4.10	1.40
<b>3563012</b>	0	-15.60	8.10	0.8350	-0.2877	-27,10	-23.10	-20.30	-17,60	-18.50	-11.40	-3.00	3.20
MS6403	0	-21.40	2.80	1,1450	1.3385	-30,00	-28,60	-25.60	-21.80	-30.00	-19.50	-8.60	1.50
MS6603	0	-13.10	6.70	0.4436	-0.9693	-27.10	-23.40	-20.50	-14.60	-21.50	-6,60	1.60	8.60
MS6701	0	-14.90	8.20	0 532B	-0.4298	-30 00	-24.60	-19.40	-16 50	-16.90	06 6-	-2.00	8

SADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

---- BAND-polerization RR METRIC-measure of power

25- 13.80 -9.40 -30.00 -4.80 -20.80 -11.40 -30.00 -4.80 -3.30 -20.80 -15.10 -30.00 -7.80 -15.10 -10.80 -30.00 -5.20 -15.10 -10.80 -30.00 -5.20 -15.10 -10.80 -30.00 -5.20 -13.10 -8.60 -30.00 -4.30 -13.10 -8.60 -30.00 -4.30 -13.10 -8.60 -30.00 -4.30 -13.10 -8.60 -30.00 -4.30 -13.10 -8.60 -30.00 -4.30 -13.10 -8.60 -30.00 -4.30 -13.10 -8.80 -30.00 -4.30 -13.10 -13.40 -30.00 -13.40 -30.00 -13.40 -30.00 -13.40 -30.00 -13.40 -30.00 -13.40 -30.00 -10.60 -13.40 -30.00 -10.60 -13.40 -30.00 -10.60 -13.50 -13.40 -30.00 -10.60 -13.50 -13.50 -30.00 -10.50 -20.10 -13.50 -30.00 -10.50 -20.10 -13.50 -30.00 -10.90 -21.30 -13.60 -30.00 -10.90 -21.30 -10.30 -10.90 -21.30 -10.30 -10.90 -21.30 -10.30 -10.90 -10.90 -10.50 -10.30 -10.90 -10.90 -10.50 -10.90 -10.50 -10.90 -10.50 -10.90						•				ì		
0.1307         -30.00         -21.80         -13.80         -9.40         -30.00         -4.80         1.50           -1.0232         -30.00         -28.50         -20.50         -11.40         -30.00         -3.30         4.30           -0.878         -30.00         -28.00         -20.80         -12.10         -12.00         -1.50           -0.878         -30.00         -23.10         -14.40         -15.10         -10.60         -7.80         -1.50           -0.554         -30.00         -23.80         -15.10         -10.60         -30.00         -6.10         0.80           -0.555         -30.00         -22.80         -15.20         -10.90         -5.20         1.10           -0.555         -30.00         -22.80         -15.20         -10.90         -5.20         1.10           0.255         -30.00         -22.10         -12.10         -12.40         -7.30         -3.80         2.50           0.255         -30.00         -22.00         -12.40         -12.40         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00         -12.00 <th< th=""><th>standerd mean deviation sker</th><th>Ä</th><th>kewness</th><th>kurtosis</th><th>minimu</th><th>5- percentile</th><th>25- percentile</th><th>median</th><th>apou</th><th>/3~ Percentile</th><th>95- percentile</th><th>maximu</th></th<>	standerd mean deviation sker	Ä	kewness	kurtosis	minimu	5- percentile	25- percentile	median	apou	/3~ Percentile	95- percentile	maximu
-1.0232         -30.00         -28,50         -20.50         -11.40         -30.00         -3.30         4.30           -0.3761         -30.00         -28,00         -20.80         -15.10         -10.00         -7.80         -1.50           -0.3761         -30.00         -23.10         -14.40         -7.80         -7.80         -1.50           -0.3763         -30.00         -23.80         -15.10         -10.60         -30.00         -5.20         1.15           -0.5056         -30.00         -23.80         -15.90         -10.90         -30.00         -6.10         0.80           -0.5056         -30.00         -22.80         -15.50         -10.90         -30.00         -6.10         0.80           -0.5056         -30.00         -22.80         -15.50         -10.90         -30.00         -6.10         0.80           -0.5556         -30.00         -22.90         -10.90         -10.90         -30.00         -4.30         1.30           -0.8557         -30.00         -28.00         -13.10         -14.40         -30.00         -4.30         1.30           -0.3155         -30.00         -28.00         -13.10         -14.40         -30.00         -4.30         <		9	2566	0.1307	-30.00	-21.80	-13.90	-9.40	-30,00	-4.80	1.50	21.90
-0.6708         -30.00         -28.00         -20.80         -15.10         -30.00         -7.80         -1.50           -0.3761         -30.00         -23.10         -14.40         -7.80         -30.00         -2.70         2.50           -0.3761         -30.00         -23.10         -15.10         -10.60         -30.00         -5.27         2.50           -0.3734         -30.00         -23.80         -15.10         -10.60         -30.00         -5.27         1.10           -0.3734         -30.00         -24.90         -15.10         -10.90         -30.00         -5.20         1.11           0.3711         -30.00         -22.10         -12.40         -7.90         -7.30         -4.10         3.50           0.2555         -30.00         -22.10         -13.10         -7.90         -7.30         -4.10         3.50           -0.8572         -30.00         -28.00         -13.10         -12.90         -12.00         -4.10         1.30           0.3195         -30.00         -28.00         -13.10         -14.40         -30.00         -4.10         1.30           0.2186         -30.00         -28.00         -13.10         -27.30         -4.10         1.30 </td <td>7.70</td> <th>-0.0</th> <td>208</td> <td>-1.0232</td> <td>-30.00</td> <td>-29,50</td> <td>-20.50</td> <td>-11.40</td> <td>-30.00</td> <td>-3.30</td> <td>4 . 30</td> <td>15.30</td>	7.70	-0.0	208	-1.0232	-30.00	-29,50	-20.50	-11.40	-30.00	-3.30	4 . 30	15.30
-0.3761         -30.00         -23.10         -14.40         -7.80         -30.00         -2.70         2.50           -0.3761         -30.00         -23.10         -14.40         -7.80         -30.00         -2.70         2.50           -0.3733         -30.00         -24.90         -15.10         -10.80         -30.00         -4.10         3.50           -0.5056         -30.00         -24.90         -15.10         -10.80         -30.00         -4.10         3.50           0.3711         -30.00         -24.90         -15.90         -10.90         -7.30         -4.10         3.50           0.2855         -30.00         -22.10         -12.40         -12.90         -7.30         -4.10         3.50           0.2855         -30.00         -22.10         -13.10         -12.90         -7.30         -4.10         3.50           0.3955         -30.00         -22.00         -13.10         -12.90         -13.00         -8.30         1.00           0.4776         -30.00         -22.00         -13.10         -14.40         -30.00         -8.30         1.00           0.4776         -30.00         -22.00         -12.50         -12.50         -22.00         -12.50 </td <td>7.10</td> <th>0.0</th> <td>301</td> <td>-0.8709</td> <td>-30.00</td> <td>-29.00</td> <td>-20.80</td> <td>-15.10</td> <td>-30.00</td> <td>-7.80</td> <td>-1.50</td> <td>10.90</td>	7.10	0.0	301	-0.8709	-30.00	-29.00	-20.80	-15.10	-30.00	-7.80	-1.50	10.90
0.0579         -30.00         -23.00         -15.10         -10.60         -30.00         -6.10         0.80           -0.333         -30.00         -23.80         -15.80         -10.80         -30.00         -5.20         1.10           0.3711         -30.00         -24.90         -15.80         -10.80         -30.00         -4.10         3.50           0.3711         -30.00         -22.00         -13.10         -12.40         -7.30         -3.80         2.50           0.3712         -30.00         -21.00         -13.10         -8.60         -30.00         -4.30         1.30           0.2655         -30.00         -22.00         -13.10         -8.60         -30.00         -4.30         1.30           0.355         -30.00         -22.00         -13.10         -8.60         -30.00         -4.30         1.00           0.355         -30.00         -22.00         -13.10         -8.40         -9.60         -4.70         1.00           0.216         -30.00         -22.90         -12.90         -22.00         -10.00         -11.40         1.00           0.2216         -30.00         -22.00         -17.50         -30.00         -11.40         1.00     <	13.10	-0.45	80	-0.3761	-30.00	-23.10	-14.40	-7,80	-30.00	-2.70	2.50	13.10
-6.3353         -30.00         -23.80         -15.80         -10.90         -30.00         -5.20         1.10           -6.5056         -30.00         -24.90         -16.50         -10.80         -30.00         -4.10         3.50           0.2555         -30.00         -22.00         -13.10         -6.60         -30.00         -4.30         1.30           0.2655         -30.00         -22.00         -13.10         -6.60         -30.00         -4.30         1.30           -0.3554         -30.00         -22.00         -13.90         -12.90         -30.00         -4.30         1.30           -0.3554         -30.00         -22.00         -13.90         -12.90         -30.00         -4.30         1.30           0.3155         -30.00         -22.00         -13.00         -8.30         1.00         -8.30         1.00           0.218         -30.00         -22.00         -30.00         -13.40         -30.00         -3.80         -3.50           0.2218         -30.00         -25.00         -17.40         -13.40         -3.60         -3.80         -3.80           0.6047         -30.00         -25.00         -17.50         -13.40         -3.60         -3.80 <td>12.10</td> <th>-0.17</th> <td>57</td> <td>0.0579</td> <td>-30.00</td> <td>-23.00</td> <td>-15.10</td> <td>-10.60</td> <td>-30.00</td> <td>-6.10</td> <td>08.0</td> <td>13.90</td>	12.10	-0.17	57	0.0579	-30.00	-23.00	-15.10	-10.60	-30.00	-6.10	08.0	13.90
-0.5056         -30.00         -24,90         -16.50         -10.80         -30.00         -4,10         3.50           0.2855         -30.00         -22,10         -12.40         -7.90         -7.30         -3.80         2.50           0.2855         -30.00         -21.00         -13.10         -6.60         -30.00         -4.30         1.30           0.2855         -30.00         -28.00         -13.10         -6.60         -30.00         -4.30         1.30           0.3556         -30.00         -28.00         -19.80         -12.90         -30.00         -5.30         1.00           0.3195         -30.00         -28.00         -13.10         -8.80         -8.60         -4.70         1.00           0.218         -30.00         -28.00         -12.50         -27.50         -27.00         -3.00         1.00           0.218         -30.00         -25.00         -17.40         -13.40         -30.00         -3.80         -3.50           0.474         -30.00         -25.00         -17.50         -13.40         -30.00         -3.80         -3.80           0.474         -30.00         -25.00         -17.50         -13.40         -3.00         -3.80	11.50	-0.16	13	-0.3353	-30.00	-23.80	-15.90	-10.90	-30,00	-5.20	1.10	17.30
0.3711         -30.00         -20.10         -12.40         -7.90         -7.30         -3.80         2.50           0.2655         -30.00         -21.00         -13.10         -8.60         -7.30         -4.30         1.30           -0.857         -30.00         -28.00         -13.10         -12.90         -30.00         -5.30         1.00           -0.355         -30.00         -28.00         -13.10         -12.90         -10.00         -5.30         1.00           -0.355         -30.00         -20.80         -13.10         -8.80         -8.00         -4.70         1.00           -0.477         -30.00         -20.90         -12.50         -12.00         -9.30         1.00           0.477         -30.00         -25.00         -17.50         -13.40         -30.00         -9.90         -3.50           0.477         -30.00         -25.00         -17.50         -13.40         -30.00         -9.90         -3.80           0.573         -30.00         -25.00         -17.50         -13.40         -30.00         -9.90         -3.80           0.524         -30.00         -25.00         -17.50         -14.10         -30.00         -4.30	10.80	-0.02	0	-0.5058	-30.00	-24,90	-16.50	-10.80	-30.00	-4.10	3,50	14.90
0.2655         -30.00         -21.00         -13.10         -8.60         -30.00         -4.30         1.30           -0.8572         -30.00         -28.00         -13.90         -12.90         -30.00         -5.30         1.00           -0.3554         -30.00         -28.00         -13.10         -8.80         -8.30         0.90           -0.3554         -30.00         -20.90         -27.50         -27.00         -30.00         -11.40         1.00           0.2218         -30.00         -20.90         -27.50         -27.50         -30.00         -11.40         1.00           0.5047         -30.00         -25.00         -17.40         -3.40         -3.80         2.70           0.6047         -30.00         -25.00         -17.40         -30.00         -3.80         -3.50           0.474         -30.00         -25.00         -17.40         -30.00         -3.80         -3.50           0.5739         -30.00         -25.10         -17.50         -13.40         -3.90         -5.30           0.524         -30.00         -25.10         -17.50         -13.60         -4.40         -4.30           0.5254         -30.00         -25.10         -17.50	14.90	-0.333	-	0.3711	-30.00	-20.10	-12.40	-7.90	-7.30	-3.80	2.50	13.40
-0.8572         -30.00         -28,00         -19.90         -30.00         -5.30         1.00           -0.3555         -30.00         -28,00         -19.80         -14,40         -30.00         -8.30         0.90           -0.4776         -30.00         -28,90         -27.50         -22.00         -4.70         1.60           -0.4776         -30.00         -20.90         -27.50         -22.00         -11.40         1.00           0.5218         -30.00         -26.90         -27.50         -22.00         -30.00         -11.40         1.00           0.6047         -30.00         -25.00         -17.40         -13.40         -30.00         -3.80         -3.50           0.477         -30.00         -25.00         -17.50         -13.40         -30.00         -3.80         -3.50           0.4734         -30.00         -25.10         -17.50         -13.40         -30.00         -11.60         -4.40           0.5254         -30.00         -25.10         -17.50         -13.60         -10.10         -4.40           0.5254         -30.00         -25.50         -18.00         -14.10         -4.40           0.525         -30.00         -25.50         -18	14.30	-0.4331	_	0.2655	-30.00	-21,00	-13.10	-8.60	-30.00	-4.30	1.30	11.60
-0.3555         -30.00         -22.00         -19.80         -14.40         -30.00         -8.30         0.90           0.3155         -30.00         -20.80         -13.10         -8.80         -8.60         -4.70         1.60           0.4776         -30.00         -20.80         -13.50         -22.00         -30.00         -11.40         1.60           0.2218         -30.00         -25.00         -17.40         -13.40         -9.00         -3.80         2.70           0.6047         -30.00         -25.00         -17.50         -13.40         -30.00         -3.50           0.474         -30.00         -25.00         -17.50         -13.40         -30.00         -3.80           0.474         -30.00         -25.10         -17.50         -13.40         -30.00         -3.80           0.474         -30.00         -25.10         -17.50         -13.40         -30.00         -4.30           0.525         -30.00         -25.50         -18.90         -14.10         -4.30         -4.40           0.525         -30.00         -27.90         -27.90         -15.60         -30.00         -17.40           0.525         -30.00         -27.90         -27.50 <td>8.10</td> <th>-0.0396</th> <td></td> <td>-0.9572</td> <td>-30.00</td> <td>-28.00</td> <td>-19.90</td> <td>-12.90</td> <td>-30.00</td> <td>-5.30</td> <td>1.00</td> <td>10.80</td>	8.10	-0.0396		-0.9572	-30.00	-28.00	-19.90	-12.90	-30.00	-5.30	1.00	10.80
0.3195         -30.00         -20.80         -13.10         -8.80         -8.60         -4.70         1.60           -0.4776         -30.00         -29.90         -27.50         -22.00         -30.00         -11.40         1.00           0.2218         -30.00         -25.00         -12.90         -8.40         -9.40         -3.80         2.70           0.6739         -30.00         -25.00         -17.50         -13.40         -30.00         -9.90         -3.80           0.4734         -30.00         -25.00         -17.50         -14.90         -30.00         -9.90         -3.80           0.5234         -30.00         -25.10         -17.50         -14.90         -30.00         -9.90         -3.80           0.5254         -30.00         -25.10         -17.50         -14.90         -30.00         -13.60         -4.30           0.5254         -30.00         -25.50         -18.00         -10.10         -4.43           0.525         -30.00         -22.50         -13.90         -30.00         -4.43           0.525         -30.00         -22.50         -13.90         -10.10         -4.43           0.525         -30.00         -22.50         -13.90 <td>7.70</td> <th>0.2237</th> <td></td> <td>-0.3555</td> <td>-30.00</td> <td>-28.00</td> <td>-19.80</td> <td>-14.40</td> <td>-30.00</td> <td>-8.30</td> <td>06.0</td> <td>12.40</td>	7.70	0.2237		-0.3555	-30.00	-28.00	-19.80	-14.40	-30.00	-8.30	06.0	12.40
-0.4776         -30.00         -28.90         -27.50         -22.00         -30.00         -11.40         1.00           0.2218         -30.00         -20.80         -12.90         -8.40         -9.40         -3.80         2.70           0.4747         -30.00         -25.00         -17.50         -13.40         -30.00         -9.90         -3.50           0.4734         -30.00         -26.30         -18.90         -14.90         -30.00         -9.90         -3.80           0.4734         -30.00         -26.30         -18.90         -14.90         -30.00         -19.90         -6.30           0.524         -30.00         -25.10         -17.50         -13.60         -30.00         -4.30           0.525         -30.00         -25.50         -18.00         -14.10         -30.00         -4.40           -0.7805         -30.00         -22.50         -20.50         -13.90         -30.00         -4.40           -0.529         -30.00         -22.90         -20.10         -15.60         -30.00         -4.40           -0.344         -30.00         -22.90         -20.10         -13.60         -10.90         -1.40           -0.3145         -30.00         -	14.10	-0.3061		0.3195	-30.00	-20.80	-13.10	-8.80	-8.60	-4.70	1.60	12.40
-30,00         -20,80         -12,90         -8,40         -9,40         -3,80         2.70           -30,00         -25,00         -17,40         -13,40         -30,00         -9,90         -3,50           -30,00         -25,00         -17,50         -13,40         -30,00         -9,90         -3,80           -30,00         -25,10         -17,50         -13,40         -30,00         -10,10         -6,30           -30,00         -25,10         -17,50         -13,60         -30,00         -10,10         -4,30           -30,00         -25,50         -18,00         -14,10         -30,00         -10,60         -4,40           -30,00         -25,50         -13,90         -13,90         -30,00         -4,40           -30,00         -27,90         -20,50         -13,90         -30,00         -4,40           -30,00         -27,90         -25,90         -21,60         -30,00         -10,90         -1,40           -30,00         -27,00         -13,00         -13,60         -5,90         5,30         -14,0           -30,00         -27,00         -13,00         -10,90         -10,90         -10,90         -10,90           -30,00         -27,00 <td>0.90</td> <th>0.7863</th> <td></td> <td>-0.4776</td> <td>-30.00</td> <td>-29.90</td> <td>-27.50</td> <td>-22.00</td> <td>-30.00</td> <td>-11.40</td> <td>1.00</td> <td>14.10</td>	0.90	0.7863		-0.4776	-30.00	-29.90	-27.50	-22.00	-30.00	-11.40	1.00	14.10
-30,00         -25,00         -17,40         -13,40         -30,00         -9.90         -3.50           -30,00         -25,00         -17,50         -13,40         -30,00         -9.90         -3.80           -30,00         -25,10         -17,50         -13,40         -30,00         -11,60         -6.30           -30,00         -25,10         -17,50         -13,60         -30,00         -10,10         -4,30           -30,00         -25,50         -18,00         -14,10         -30,00         -10,60         -4,40           -30,00         -25,50         -18,00         -15,60         -30,00         -6.80         1.50           -30,00         -27,90         -25,90         -21,60         -30,00         -1,40           -30,00         -27,00         -25,90         -21,60         -30,00         -1,40           -30,00         -27,00         -27,90         -21,60         -30,00         -5,90         -1,40           -30,00         -27,00         -18,00         -16,50         -30,00         -10,90         -0.80           -30,00         -29,10         -21,30         -16,50         -30,00         -10,90         -0.80	14.40	-0.2744		0.2218	-30.00	-20.80	-12.90	-8.40	-9.40	-3.80	2.70	16.50
-30.00         -25.00         -17.50         -13.40         -30.00         -9.90         -3.80           -30.00         -26.30         -18.90         -14.90         -30.00         -11.60         -6.30           -30.00         -25.10         -17.50         -13.60         -30.00         -10.10         -4.30           -30.00         -25.50         -18.00         -14.10         -30.00         -10.60         -4.40           -30.00         -25.90         -20.50         -13.90         -30.00         -6.80         1.50           -30.00         -27.90         -20.10         -15.60         -30.00         -10.90         -1.40           -30.00         -27.90         -27.90         -27.60         -17.50         -6.10           -30.00         -29.10         -27.30         -13.60         -5.90         5.30           -30.00         -29.10         -27.30         -16.50         -30.00         -5.90         -5.90	8.90	-0.0521		0.6047	-30.00	-25,00	-17.40	-13.40	-30,00	-9.90	-3.50	12.80
-30.00 -26.30 -18.90 -14.90 -30.00 -11.60 -6.30 -30.00 -25.10 -17.50 -13.60 -30.00 -10.10 -4.30 -4.30 -230.00 -25.50 -18.60 -30.00 -10.10 -4.30 -230.00 -25.50 -18.00 -16.10 -4.30 -30.00 -29.00 -20.50 -13.90 -30.00 -10.90 -10.90 -1.40 -30.00 -29.80 -25.90 -21.60 -30.00 -17.50 -6.10 -30.00 -27.00 -13.60 -30.00 -5.90 -5.10 -30.00 -29.10 -27.30 -16.50 -30.00 -10.90 -0.80	10.00	-0.1348		0.4747	-30.00	-25,00	-17.50	-13.40	-30.00	-9.90	-3.80	12.10
-30.00 -25.10 -17.50 -13.60 -30.00 -10.10 -4.30 -30.00 -25.50 -18.00 -14.10 -30.00 -10.10 -4.30 -4.30 -230.00 -29.00 -20.50 -13.90 -30.00 -6.80 1.50 -30.00 -27.90 -20.10 -15.60 -30.00 -10.90 -1.40 -30.00 -27.00 -27.90 -21.60 -30.00 -75.90 -5.10 -30.00 -29.90 -27.30 -16.50 -30.00 -10.90 -10.90 -0.80	8.60	-0.1076		0.5739	-30.00	-26,30	-18.90	-14.90	-30.00	-11.60	-6.30	11.60
-30.00 -25.50 -18.00 -14.10 -30.00 -10.60 -4.40 -30.00 -29.00 -20.50 -13.90 -30.00 -6.80 1.50 -30.00 -27.90 -27.90 -25.90 -15.60 -30.00 -17.50 -1.40 -30.00 -27.90 -27.90 -27.90 -21.60 -30.00 -17.50 -6.10 -30.00 -27.00 -19.00 -13.60 -30.00 -5.90 5.30 -30.00 -29.10 -21.30 -16.50 -30.00 -10.90 -0.80	9.80	-0.2019		0.4734	~30.00	-25.10	-17.50	-13.60	-30.00	-10.10	-4.30	12.60
-30.00 -29.00 -20.50 -13.90 -30.00 -6.80 1.50 -30.00 -27.90 -27.90 -25.01 -15.60 -30.00 -10.90 -1.40 -30.00 -27.90 -27.90 -21.60 -30.00 -17.50 -6.10 -30.00 -29.00 -29.00 -19.00 -13.60 -30.00 -5.90 5.30 -30.00 -29.10 -29.10 -21.30 -16.50 -30.00 -10.90 -0.60	9.30	-0.0469		0.5254	-30.00	-25.50	-18,00	-14,10	-30.00	-10.60	04.4-	17.30
0.0529 -30.00 -27.90 -20.10 -15.60 -30.00 -10.90 -1.40	7.30	0.1142		-0.7805	-30.00	-29.00	-20.50	-13.90	-30.00	-6.80	1.50	12.30
-30.00 -29.50 -25.90 -21.60 -30.00 -17.50 -6.10 -30.00 -27.00 -19.00 -13.60 -30.00 -5.90 5.30 -30.00 -29.10 -21.30 -16.50 -30.00 -10.80 -0.80	7.10	0.3520		0.0529	-30.00	-27.90	-20.10	-15.60	-30,00	-10.90	-1.40	11.90
-0.3115 -30.00 -27.00 -19.00 -13.60 -30.00 -5.90 5.30 -0.1454 -30.00 -29,10 -21.30 -16.50 -30.00 -10.80 -0.80	2.10	1.072	_	1.3044	-30.00	-29.90	-25,90	-21.60	-30.00	-17.50	-6.10	10.90
-0.1454 -30.00 -29.10 -21.30 -16.50 -30.00 -10.90 -0.80	8.20	0.405	~	-0.3115	-30.00	-27.00	-19.00	-13.60	-30.00	-5.90	5.30	18.60
	6.10	0.434	ю	-0.1454	-30.00	-29,10	-21.30	-16.50	-30.00	-10.90	-0.80	21.60

RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

test ID	elevation setting	mean	stendard deviation	skemess	kurtosis	minimum	5- percentile	25- percentile	median	mode	75- percentile	95- percentile	ատայաստ
MS 5502	a	-0.60	27.10	-0.2437	2,5859	-16.50	-4.60	-2.00	-0.30	-0.60	1.00	3.30	19.50
MS 5503	• •	-0.60	27.10	-0.4862	1.8181	-17.60	04.4-	-1.90	-0.30	-0.40	1.10	3.20	10.90
MS5504	6	-0,40	27.50	-0.2092	0.8172	-11.90	-4.00	-1.60	~0.30	-0,60	1.10	3.00	11.40
MS 5601	0	-0.60	27.10	-0.2666	0.7596	-12.40	-4.40	-1.90	-0.30	-0,60	1.10	3.30	9.60
MS 5602		-0.80	26.90	-0.1577	0.7379	-14.90	-4.70	-2.20	-0.40	-0.60	1.00	3,50	12.60
MS5603	0	-0.60	27.10	-0.2478	1.9764	-16.40	-4.30	-1.90	-0.30	-0.30	1.10	3.20	16.40
MS 5604		-0.90	26.30	-0.1297	0.7725	-16.00	-5, 70	-2.50	-0.80	-0.30	1.00	4.00	13,30
MS5702		-0.60	27.30	-0.1618	0.8455	-10.80	-4.10	-1.90	-0.30	-0.30	1.00	3.00	34.40
MS5703	0	-0.60	27.10	-0.1240	0.5730	-13.90	-4.40	-2.00	-0.30	0.10	1.10	3,30	10.90
MS5704	0	-0.40	27.50	-0.3044	0.5627	-13.10	-4.00	-1.60	-0.30	0.20	1.00	3.00	7.30
VS 5801	~	-0.90	26.20	-0.4131	2.0132	-16.00	-6.10	-2.30	-0.60	-0,90	1.10	3.70	14.10
MS 5802	-4	-0.60	27.30	-0.2524	0.3872	-11.60	-4.20	-1,80	-0.30	-0.20	1.00	3.00	7.20
MS 5803	~4	-1.10	25.40	-0.6851	2.3392	-21.00	-7.80	-2.80	-0.80	-0.90	06.0	3.80	15.80
YS 5804		-0.60	27.20	-0.1753	0.8523	-11.40	-4.30	-1.90	-0.40	-0.30	1.00	3.20	15.80
YS6001	~	-0.60	27.00	-0.1583	0.7888	-13.80	-4.70	-2.00	-0.40	-0.90	1.10	3.70	10.10
YS6002	0	-0.60	27.10	-0.3262	1.4211	-13.60	-4.30	-1.80	-0.30	-0.60	1.00	3.20	11.10
4S6004	0	-0.40	27.40	-0.2581	0.7116	-11,80	-4.20	-1.80	-0.30	-0.30	1.00	3.00	9.60
WS6101	0	-0.40	27.30	-0.2201	0.9860	-14,60	-4.30	-1.90	-0.30	-0.60	1,10	3.20	13.60
MS6102		-0.60	27.10	-0.3083	1.2493	-13.90	04.4-	-1.90	-0.30	-0,60	1.10	3.20	11.30
WS63011	0	-1.00	25.80	-0.5433	2.0276	-20.60	-6.60	-2.80	-0.80	-0.40	1.00	3.80	15,80
MS63012	0	-0.90	26.10	-0.3712	1,7123	-20.30	-5.80	-2.50	-0.60	-0.20	1.00	3.80	15.60
VS6403	0	-0.90	26.30	0.1970	1.3886	-13.90	-5.30	-2.50	-0.90	-0.60	06.0	04.4	16.30
MS6603	0	-1.10	25.50	-0.3761	1.4862	-18.80	-6.80	-2.80	-0.90	-0.90	1.00	4.10	18.80
10000	•	•	:										

RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

test	elevation		standard				۴	-52-			75-	-92-	
8	setting	<b>86</b>	deviation	skeemess	kurtosis	minima	percentile	percentile	median	•pou	percentile.	percentile	maximum
MS5502	٥	-13.80	11.60	0.4566	-0.3201	-24.50	-20.00	-17.60	-14,10	-18.40	-10,10	-5.70	96,90
MS5503	0	-15.90	₽.80	-0.0981	-1.3500	-30.00	-29.50	-25.80	-14,10	-30.00	-8.10	-2.20	2,20
PS 5504	0	-18.00	4.20	0.0742	-1.5459	-30.00	-27.80	-25.80	-16.30	-26.00	-12.40	8-	-3.80
MS 5801	0	-12.90	11.20	-0.6564	-0.8120	-26.60	-23.40	-18.00	-10.40	-8.90	-8.30	-5.80	-0,30
HS 5602	-	-14.50	11.10	0.6131	-0.4164	-24,10	-20,10	-17.90	-15.60	-17.10	-11.30	-6.20	1.90
MS5603	0	-14.90	9.60	0.2564	-1,2238	-25.80	-22.00	-19.90	-15.40	-20.00	-9, 90	-6.40	4.30
MS 5604	-	-13,90	9.70	0.2087	-0.8225	-28.00	-23.40	-19.00	-14,60	-19.00	-8.60	-3.20	3.20
HS5702	<b>~</b>	-12.40	13.50	0.6185	-0.3426	-21.80	-17.80	-15.60	-13.30	-16.50	04.6-	-4.80	06.0
MS5703	0	-12.90	13.10	0.1053	-0.6106	-23.00	-19.40	-15.90	-12.90	-11.90	08.6-	-6.10	-0.60
MS 5704	0	-17.30	5.20	-0.0651	-1.5595	-30.00	-27.50	-25.30	-15.10	-26,30	-10.40	-6,60	-2,30
MS 5801		-17.60	5.70	0.5200	-0.6425	-30.00	-26.50	-23.10	-18.50	-22,30	-13.10	-4.80	09.0
MS5c72	-	-13.30	12.60	0.6356	-0.2485	-22.90	-18.50	-16.50	-13.90	-16.50	-10.30	-5.60	0.20
HS 5803	-	-22.00	-1.40	0.7567	-0.8444	-30.00	-29.90	-29.90	-27.90	-30,00	-13.60	-4.30	1.30
MS5804	<b>,-4</b>	-12.60	13.00	0.5403	-0.4741	-22.00	-16.50	-16.30	-13.40	-16.40	04.6-	-4.70	3,30
MS6001		-17.40	9.00	1.8606	4.0711	-25.00	-21.30	- 19.50	-18,30	-18.80	-16.50	-9.30	06.0
MS6002	0	-18.00	8.40	1.6371	2.5550	-25.00	-21.80	-20.10	-19.00	-19.50	-17.00	04.6-	0,10
MS6004	0	-19.60	7.20	2.1562	5.8709	-26.00	-22.90	-21.50	-20.40	-20.60	-19.00	-12.40	-1.00
MS6101	0	-17.90	8.80	1.7278	3.4631	-25.00	-21,50	-19.90	-18.60	-19.40	-17.00	-10.40	07 0-
MS6102	-	-18.50	7.70	1.8688	3.9133	-26.60	-22.30	-20.80	-19.50	-20.00	-17.60	-9.40	2.70
MS63011	ပ	-17.00	5.40	0.0550	-1.2051	-30.00	-28,30	-24.00	-17.30	-30.00	08.6-	-5.30	-0.30
MS63012	0	-18.90	5,40	1.0133	0.0798	-29.50	-25.00	-23.00	-21.00	-23.00	-15.10	-6.40	0.20
MS6403	0	-24.00	0.20	1.6740	2.4958	-30.00	-29.90	-27.80	-25, 50	-30.00	-22.60	-10,60	09.0-
MS6603	0	-15.60	04.9	0.6148	-0.6272	-29.60	-25.30	-22.50	-17.30	-23.10	-9.60	-0.20	6,70
MS6701	0	-19.00	6.40	0.7469	-0.3757	-,0,00	-26.80	-24.40	-20.80	-24.50	-14,10	-6.70	6.10

					RADAR	RADAR SCENE METRICS	٧;					
		stat	istics based	on histogi	rams of lo	& metric val	statistics based on histograms of log metric values for target-free back tound	it-free back	k. round			
1 1 1 1 8	* * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	1 1 1 1 1 1 1	BAND-polar:	ization LR	METRIC-mets	BAND-polarization LR METRIC-measure of power	; ; ; ;	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	5 6 1 1 1 1	
elevetion		standard				ψ.	25-			75-	-56	
setting	11 P	deviation	skewness	kurtosis	minion	percent:10	percentile	median	•рош	percentile	percentile	meximum
0	-7.20	15,30	-0.2425	0.0124	-30.00	-19.80	-11.90	-6.90	-9.60	-1.60	96.4	16.00
0	-9.50		-0.0908	-0.9269	-30.00	-27.00	-18.00	-8.90	-30,00	-0.90	6.60	18.10
0	-11.90	9, 50	-0.0643	-0.8066	-30.00	-26.40	-18.10	-12.10	-30.00	-4.60	1.90	20.30
0	-6.10	15.50	-0.4803	-0.3644	-30.00	-21.10	-12.10	-4.60	-30.00	0.80	5.90	16.50
-	-8.60	13.60	-0.0812	-0.0748	-30.00	-21,50	-13.60	-8,80	-30.00	-3.30	4.30	16.30
0	-8.60	13.20	~0.0885	-0.4366	-30.00	-22.10	-14.30	-8.90	-30,00	-2.00	4.80	19.50
	-8.60	12.40	-0.0127	-0.5240	-30.00	-23.30	-15.10	-8.90	-30,00	-1.80	6.30	18.00
-	-5.90	16.80	-0.2570	0.2730	-30.00	-18.30	-10.40	-5.80	-7.20	-0.90	5.80	22.80
0	-6.10	16.50	-0.3631	0,1322	-30.00	-18.90	-10.60	-5.70	-5.80	-0.60	5.60	17.50
0	-10.10	10,30	-0.102B	-0.9076	-30.00	-26.00	-17.50	-9.80	-30.00	-2.00	4.30	14,30
-	-11.40	9.80	0.1998	-0.2920	-30.00	-25.60	-17.40	-11.90	-30.00	-5.40	4 , 30	17.90
~	-7.20		-0.2455	0.2480	-30.00	-19.40	-11.60	-6.80	-5.20	-2.20	9.4	22.80
-4	-15.90	4.20	0.6141	-0.4438	-30.00	-29.80	-23.00	~18.00	-30.00	-8.80	2.80	18.90
-	-6.80	15.80	-0.2344	0.1871	-30.00	-19.30	-11.30	-6.60	-7.60	-1.60	5.30	17.60
	-11.30	11.70	0.2027	0.9010	-30.00	-23.00	-15.30	-11.10	-30.00	-7.30	1.50	23.90
0	-11.60	11.60	0.1160	0,7435	-30.00	-23.10	-15.60	-11 40	-30,00	-7.70	09.0	23.00
0	-13.30	10.20	0.0971	0.7749	-30.00	-24.50	-17.00	-12.90	-30.00	-9,40	-2.00	15.60
0	-12.40	11.10	0.0095	0.7998	-30.00	-23.60	-16.00	-12.10	-30.00	-8.40	-1.50	23.60
-4	-12.90	10.20	0.2643	0.8088	-30.00	-24.50	-16.90	-12.80	-30.00	-9.10	-0.20	20.30
0	-12.10	9.20	-0.0230	-0.6656	-30.00	-27.00	-18.50	-12.10	-30.00	-5.30	2.20	13.10
0	-13.10	8.80	0.3505	0.0471	-30.00	-26,00	-18,10	-13.60	-30,00	-8.30	2.00	15.30
0	-19.50	3.40	0.8406	0.7775	-30.00	-29.90	-24.30	-20.00	-30.00	-15.90	06.4~	12.30
0	-10.40	10.00	0.2914	-0.4405	-30.00	-25.00	-17.00	-11.60	-30.00	-3.70	6.80	20.10
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RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

test ID	elevation setting	E .	standard deviation	skemess	kurtosis	minima	5- percentile	25- percentile	median	mode	75- percentile	95- percentile	meximum
MS5502	0	-0.80	25.60	-0.4468	2.2395	-19.30	-5,30	-2.20	-0.40	-0.30	1.00	3.30	19.60
MS5503	0	-0.60	27.00	-0.4159	1.8472	-17.80	-4.70	-2.00	-0.40	-0.20	1.10	3.50	12.30
MS 5504	0	-0.60	27.10	0.0033	0.8647	-12.30	-4.30	-2.00	-0.40	-0.30	1.10	3.70	15.90
MS 5601	0	-0.60	27.00	-0.4957	1.2715	-14.80	-4.80	-2.00	-0.30	-0.40	1.10	3.30	8.90
MS5602	-4	-0.90	26.30	-0.5733	1.6214	-17.80	-5.80	-2.30	-0.40	-0.30	1.00	3.50	11.90
MS 5603	0	-0.60	27.00	-0.2482	2.0497	-17.60	-4.80	-2.00	-0.30	0.10	1.10	3,30	16.10
MS5604	-	-0.90	26.00	-0.5243	1.8369	-18.00	-6.30	-2.50	-0.60	-1.10	1.00	3.70	13.90
MS5702	-	-0.60	26.90	-0.2070	1.0420	-16.90	-4.80	-2.00	-0.40	-0.60	1.00	3.30	12.40
MS5703	0	-0.80	26.50	-0.2581	0.6866	-14.40	-5.30	-2.30	-0,60	-0.40	1.10	3.70	11.40
HS5704	0	-0.60	27.20	-0.3601	1.2238	-18.50	-4.30	-1.90	-0.30	-0.20	1.00	3.20	7.90
MS5801	-	-0.90	25.60	-0.5089	2.0642	-19.50	-6.80	-2.70	-0.80	-0.90	1.10	4.40	13.90
MS5802		-0.60	27.00	-0.3492	1.1534	-14.40	-4.80	-2.00	-0.40	-0,60	1.00	3.20	12.90
MS 5803	-	-1.50	24.40	0.0212	0.8923	23.10	-8.30	-3,70	-1.50	-1.60	05.0	6.70	16.80
MS5804	<b>~</b> 4	-0.60	26.80	-0.2577	1.6945	-15.30	-4.90	-2.20	-0.40	-0.20	1.00	3.30	18.50
MS6001		-0.80	26.20	-0.5223	2.1656	-15.90	-6.20	-2.20	-0.40	-0.30	1.00	3.70	17.00
MS6002	0	-0.80	26.30	-0.6613	2.7664	-20.00	-5.80	-2.00	-0.30	-0.20	1.10	3.50	15.90
MS6004	0	-0.80	26.50	-0.1624	1.6784	-17.40	-5.30	-2.20	-0.60	-0.40	1.00	00.4	13.90
MS6101	0	-0.60	26.60	-0.5916	3.9166	-22.90	-3.20	-2.00	-0.30	-0.20	1.10	3.30	20.60
PS6102	-	-0.90	26.10	-0.5857	2.6314	-21.40	-6.40	-2.20	-0.40	0.10	1.00	3.50	14.60
MS63011	0	-1.00	25.70	0.5125	2.1366	-17.40	-6.30	-2.70	-0.80	-0.30	1,00	4.10	18.90
MS63012	6	-1.10	25.30	-0.4033	1.8704	-21.00	-7.30	-3.00	-0.90	-1.80	1.00	04.4	19.40
MS6403	0	-0.90	25.90	0.5481	0.9421	-15.10	-5.40	-2.80	-1.10	-1.30	09.0	5.60	16.10
MS6603	0	-1.40	24.90	-0.6934	1.8123	-21.10	-8.40	-3.00	-0.80	-0.30	1.10	4.30	16.00
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RADAR SCENE METRICS

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test	•levetion		standard				4	25-			75-	-56	
8	setting	E	deviation	skewness	kurtosis	minimu	percent11e	percentile	median	<b>⊕</b> poш	percentile	percentile	meximum
MS 5 502	¢	-10.90	13.70	0.1746	-1,0012	-23,50	-18.50	-15.90	-10.80	-17.00	-6.60	-2.30	6.20
MS 5 5 0 3		-13 40	7.80	-0.0736	-1.2880	-30,00	-26.50	-22.40	-11.90	-24.50	-5.70	-0.20	6.30
MS 5 50 4		-15 40	7.80	0.0443	-1.4260	-28.90	-24.80	-21.80	-14.80	-7.70	-8.90	-5.80	06.4
MS 5601		-9.80	13.60	-0.7541	-0.7505	-25,90	-22.00	-14.60	~7.10	-5,40	06.4-	-2.20	3.80
MS 5602		-12.60	11.70	0.4657	-0 8860	-24.60	-19.50	-17.60	-13.40	-18.00	-7.80	-2.50	6.90
MS 5603	. 0	-12.40	11.20	0.2344	-1.3215	-24.00	-20.50	-16.50	-12.60	-18.50	-6.30	-2.20	5.70
MS 5604		-12, 10	10.70	0,1639	-1,1170	-26.60	-22.10	-18.90	-12.40	-20.00	-6.10	-0.60	6.30
MS5702	-	-9.90	15.30	0.4795	-0.5536	-19.90	-16.30	-14,10	-10.30	-14.10	-6.10	-1.00	8.60
MS5703	0	-9.60	15.40	-0.0423	-0.7647	-21,90	-17.80	-13,60	-9.40	-8.90	-5.80	-1.50	3.30
MS 5704		-14.10	8.00	-0.0904	-1.5287	-29.00	-25.00	-22.50	-12.10	-23.80	-7.20	-3.20	1.60
MS 5801	-	-14.40	8.60	0.5825	-0.4939	-28.40	-23.90	-19.90	-15.40	-20.30	-10,10	06.0-	5.30
FCS 5802		-11,10	14.00	0.5208	-0.3824	-20.80	-17.50	-15.30	-11.60	-16.50	-7.70	-2.30	8.80
MS 5803	•	-18.00	3.70	0.5841	-0.7200	-30.00	-28.60	-23.60	-20.50	-30.00	-11.30	-2,30	5.10
MS 5804		-10.60	14.30	0.3873	-0.7236	-20,60	-17.50	-15.10	-11.10	-15.40	-6.80	-1.50	5.30
MS6001	٠.	-24.90	06.6	1.6783	2.2778	-23.80	-19.50	-18,00	-16.80	-17.80	~13,40	-2.50	9.10
MS 5002	, c	-15.30	08.8	1.5897	2.0391	-23,50	-19.80	-18.40	-17.00	-18.10	-13.60	-4.00	8.40
MS6004		-16.50	9.30	1.8219	3,3553	-24, 50	-20.60	-19.00	-17.60	-17,50	-15.60	-6.30	2.70
MS6101	. 0	-16.10	9.50	1.8701	3.7229	-23,50	-20.10	-18.60	-17.50	-18.60	-14.90	-6.30	8.80
MS6102		-16.50	9.10	1.6206	1,9151	-25.00	-21.40	-19,90	-18.50	-19.50	-15.10	-3.50	5.80
MS63011		-15.30	8.00	-0.0198	-1.0765	-30,00	-25.90	-21.30	-14.90	-9.90	-9.40	08.4-	06.0
MS63012		-15.80	8.10	0.89/4	-0.1862	-27.00	-22.90	-20,30	-17.80	-18.90	-11.90	-3.30	2.80
MS5403		-22.00	2.50	1.2431	1.4911	-30.00	-28.60	-25.80	-22.80	-30.00	-20.40	-9.90	0.30
				6937 0	0062	20 00	-23 40	- 20 00	00 711	-33 KA	08.31	000	36
2000	=	13.00	9	700.	7000.1-	00.07	) P. 73	06.03	70.47	746.00	2	30.3	•

RADAR SCENE METRICS

statistics based on histograms of log metric values for target-free background

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e	setting	G	deviation	skemess	kurtosis	minimum	percentile.	percentile	median	epou	percentile	percentile.	maximum
55502	•	2.70	30,10	-0.0784	0.3719	-10.60	-1.60	1.00	2.80	2.80	4.40	7.10	14.10
55503	•	2.50	30.00	0.0461	0.0780	-10.30	-1.50	0.90	2,50	3.00	4,30	6.80	13.60
MSS504	•	3.00	30.60	0.0518	0.2036	-7.20	-0.80	1,50	3.20	2.80	4.80	7.30	14.90
S5601	0	3.00	30.40	0.0160	0.1897	-9.40	-1.30	1.40	3.00	3,30	4.80	7.30	15.60
55602	-	2.20	29.30	0.1473	0.1409	-9.60	-2.50	0.30	2.20	2.00	4.20	7.20	16.40
S5603	0	2.50	29.70	0.0608	0.2025	-10.40	-2.00	09.0	2.50	2.50	4.30	7.10	14.60
55604		2.00	29,30	0.1766	0.2191	-7.90	-2.30	0.20	2.00	1.40	3.80	6.40	13.80
55702		2.50	29.80	0.0275	0.2202	-7.40	-1.80	06.0	2.50	2.50	4.30	6.80	17.50
55703	•	3.00	30.30	0.1168	0.1458	-9,60	-1,40	1.30	3.20	3.00	5.10	7.90	14.60
55704	0	2.80	30.40	0.0715	0.1708	-7.30	-1.10	1.30	3.00	3.30	₹.60	7.10	15.90
55801	-4	2.80	30.20	0.1787	0.3099	-9.60	-1.30	1,10	2.80	2.80	4.60	7.30	15.40
S5802	~	2.00	29.50	0.0983	0.4198	-7.80	-2.00	0,40	2.20	1.50	3.80	6.30	19.50
55803		3.80	30.20	0.4668	0.8886	-9.10	-1.80	1.50	3.70	3.30	6.20	10.60	28.00
55804	-	2,00	29.40	0.0602	0.3054	-10.40	-2.20	0.30	2.00	2.50	3.80	6.30	13.30
56001	-	2.50	29,60	0.3370	0.3955	-8.10	-2.00	0.60	2.50	1.40	¥.30	7.80	18.00
2005	0	2.30	29.50	0.2812	0.4047	-9.10	-2.00	09.0	2.30	2.70	4.30	7.40	15.80
S6004	0	2.30	29.60	0.1467	0.1683	-9.40	-2.00	09.0	2.50	2.80	₩.30	7.20	18.00
56101	0	1.60	28.90	0.2597	0.5827	-13.40	-2.70	-0.10	1.60	08.0	3.50	6,60	18.80
56102	-	1.60	28.70	0.4033	0.5731	-9,10	-2.80	-0.30	1.50	1.00	3.50	6.80	17.40
563011	٥	1.80	29.10	0.0847	0.2225	-9.90	-2.70	-0.10	1.90	1.60	3.70	6.30	18.00
\$63012	0	2.50	29.70	0.2562	0.3087	-10.40	-1.90	09.0	2.50	2.00	4.30	7.30	14.80
55403	0	1.50	29.00	0.1595	0.7088	-10.90	-2.50	-0.10	1.60	06.0	3.30	5.90	21.00
£56603	0	2.00	29.20	0.1939	0.2220	-8.90	-2.30	0.20	2.00	2.00	3.80	6.80	15.40
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# **Appendix B Target Metric Statistics**

In an attempt to make this document as useful as possible, statistics on radar feature metrics as they relate to the actual targets were compiled and are included in this appendix. The procedure for compiling these statistics was the following. First of all, a mask was created for each scene that served two purposes. One was to remove the influence of a man-made target on the radar return by effectively removing from the scene a portion of one or more azimuth slices that was centered on the likely location of each target. The other purpose was to identify the strongest return from that segment as the target return, or metric value. The target metric value was then compared with the target-free background to produce the global target prominence for that target that is defined in Chapter 3 of the main text.

As with the previous appendix, data are presented in terms of both the type of received signal considered (total power, right receive-right transmit (RR) polarization power, left receive-right transmit (LR) polarization power) and the metric being considered (measure of power, signal-to-clutter, variance, and polarization ratio).

TARGET RADAR METRICS

global target prominence measured relative to terget-free background

------ BAND-total power METRIC-measure of power -------

			Toe metado	alohal tareat		UTA	UTA	t. est	elevation
target	orientation	comment	value		(meters)	(meters)	(meters)	e	setting
H113	FROMT	IN OPEN	18.69990	0.89983	4204.000	75842,540	60686.090	MS5502	0
<b>W</b> 20	REAR	IN OPEN	21.29170	0.99998	4298.000	75544.870	60691.750	MS5502	0
H60	RIGHT FRONT	IN OPEN	10.18710	0.98193	4166.000	75641.670	60568.220	MS5502	0
M35	LEFT FRONT	IN OPEN	28.66950	1.00000	4120.000	75653.160	60451.570	MS 5502	o
ns2	FRONT	SHADED	25,61810	1.00000	1703.000	78488.700	57970.690	PS5503	0
M35	FRONT	SHADED	14.26090	0.99613	1762.000	78474.130	57878.950	MS5503	0
<b>1</b>	MOVER		18.58060	1.00000	1738.000		•	MS 5503	0
<b>146</b> 0	REAR	SHADED	17.12870	0.88897	2335,242	77301.210	58849.070	MS 5504	ຜ
TEN	RIGHT SIDE	IN OPEN	26.23890	1.00000	2419.179	77218.320	58836.180	MS \$ 504	0
DECOY	FRONT	IN OPEN	18.49240	1.00000	3170.000	77894.780	56585.940	MS5601	0
M35	RICHT SIDE	IN OPEN	10.06230	0.99169	3015.000	78003, 990	56700.860	MS 5601	0
M113	RIGHT FRONT	IN OPEN	12.63630	0.99852	3791,000	75865.740	59926.980	MS 5602	
URI	FRONT	IN OPEN	13,02690	0.99889	3950.000	75702.860	59919.850	MS 5602	-
M60	LEFT SIDE	IN OPEN	16.64590	0.99985	4080.000	75576.280	59950.970	MS 5602	
M35	REAR	IN OPEN	21,59930	1.00000	3511.000	77928.700	56170.000	MS 5603	0
M35	FRONT	BEHIND TREE	18.68010	86668.0	3550,000	77890.260	56146.420	MS5603	o
DS2	LEFT SIDE	IN OPEN	20,24950	1.00000	3660.000	77877.480	\$6029.000	MS 5603	0
M60	RIGHT SIDE	IN OPEN	17.81140	0.99989	3041.000	76566.390	59496.020	MS 5604	1
Meo	RIGHT SIDE	IN OPEN	12,05310	0.99321	3065.000	76538.660	59440.020	MS 5604	
AH1	LEFT REAR	IN OPEN	6.46050	0.92330	2925,000	76676.870	59414.960	MS 5604	
M35	FRONT	SHADED	16.91160	0.88986	3214.000	76387.810	59421.170	MS\$604	
H113	RIGHT SIDE	IN OPEN	17.77340	0.88888	3112.000	76488.520	59382.500	MS 5604	
M113	LEFT SIDE	BEHIND TREES	13.03000	0.99627	3163.000	76435.380	59334.480	MS 5604	
M60	LEFT REAR		18,15040	1.88881	4456.000		•	MS5702	-
M113	RIGHT FRONT		14.47950	0.99887	4570,000			MS 5702	~
M60	LEFT FRONT		18,15040	0.99991	4456.000	•		MS 5702	,
M35	RIGHT FRONT		15,60680	0.99963	4574.000			MS 5702	-
M60	LEFT FRONT		13,16530	0.99906	3880.000			MS5703	0
<b>#3</b> 5	FRONT		22.07110	1.00000	3919.000			MS5703	6
DECOY	B/A		14.90070	0.99985	3809.000			MS5703	0
M60	RIGHT FRONT		17.59900	98886 0	3808.000	•		MS 5703	0
M113	RIGHT FRONT		12,75560	0.99862	3991.000		•	MS5703	0
M60	RIGHT FRONT		4.84020	0.93263	2469.000		•	MS5704	0
M113	RIGHT FRONT		25,73140	1.00000	2349.000			MS5704	0
<b>E</b>	LEFT FRONT		17.06500	1.00000	2213.000	,	•	MS5704	0
M35	RIGHT FROM		19.22620	1.00000	2657.000		٠	MS 5801	-
H60	LEFT FRONT		13.69270	0.99887	2644.000		•	MS 5801	-4
M113	FRONT		8.10760	0.87313	2612.000		٠	MS 5801	~
<b>K35</b>	RIGHT FRONT		16.16180	0.98969	4 596.000		•	MS 5802	
M113	RIGHT FRONT		17.00940	0.99989	4565,000		٠	MS 5802	
DECOY	FRORT		15.27160	0.88972	4456.000			MS 5802	
<b>H</b> 00	RIGHT FRONT		9.34920	0.98675	4574.000		•	MS 5802	

TARGET RADAR METRICS

global target prominence measured relative to target-free background

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		,	log metric	-	rang.	northing	sasting	test	.levation
terior	orientation	comment	value	prominence	(meters)	(meters)	(meters)	8	setting
nsz	REAR		27,98550	1.00000	1481,000	•		MS5803	-
3£0	REAR		8,48550	0.96271	1352,000	•	٠	MS5803	-4
M113	FRONT		11.26410	0.99525	1464,000	. •	•	FS5803	-
760 7	LEFT SIDE		22.27620	1.00000	1376,000	•		MS5803	-
M113	FROM		24.80390	1.00000	4570,000		•	MS5804	-
9	RIGHT SIDE		16.16590	0.99998	44.56.000		•	MS5804	-4
M113	LEFT SIDE	UNDER TREES	18,42870	0.99991	3878,000	79437,000	54153,000	MS6001	
£35	LEFT FROMT	UNDER TREES	20.72510	0.99996	3898,000	78490.000	54147.000	MS6001	7
£35	LEFT FRONT	UNDER TREES	18.61560	0.89993	3919.000	79570.000	54151.000	MS6001	
ABI	LEFT SIDE	BEBIND TREETOP	-0.73120	0.91364	4164,000	79273.000	53783.000	MS6002	0
M113	UNKNOWN	BEHIND TREETOP	5.37360	0.97394	4138.000	79292.000	53845.000	MS6002	0
M113	UNICHOWN	BEHIND TREETOP	0.42890	0.93038	4170,000	79319.000	53818.000	MS6002	0
<b>M</b> 35	RIGHT SIDE	IN OPEN	16.24710	0.88898	3845.000	79466.000	54196.000	MS6002	0
<b>#35</b>	RIGHT SIDE	BEHIND TREETOP	15.53420	0.89983	3852,000	79495.000	54197.000	MS6002	٥
<b>H</b> 80	LEFT SIDE	IN OPEN	16.89940	1.00000	3843,000	79424.000	54185.000	MS6004	6
M113	RIGHT FRONT	IN OPEN	22,13600	1.00000	3878,000	79437,000	54153.000	MS6004	0
H113	LEFT FRONT	UNDER TREES	11.94770	0.98942	3898.000	79490.000	54147.000	MS6004	0
<b>H</b> 35	RIGHT SIDE	IN OPEN	21.86530	1.00000	3919.000	78570,000	54151.000	MS6004	0
M35	FRONT	BEHIND TREETOP	21.17960	0.99996	4184,000	•	٠	MS6101	0
<b>H</b> 35	RIGHT SIDE	BEHIND TREES	8,54520	0.88534	4169.000	79397,000	53839,000	MS6101	0
9 <b>2</b>	LEFT SIDE	IN OPEN	17.46540	0.99993	3843.000	79424,000	54185,000	HS6101	0
nsz	LEFT FROMT	NEAR TREE	13.56120	0.88870	3696.000	78490.000	54147.000	MS6101	0
₩ ₩	RIGHT SIDE		14.68010	0.89991	3919.000	•	•	MS6101	0
M113	LEFT FRONT	BEHIND TREETOP	10,16390	0.89630	4142.000	78372.000	53860.000	MS6102	-
M113	FRONT	IN TREES	24.15280	1.00000	3898.000	79490.000	54147.000	MS6102	
nsz Zen	LEFT SIDE		20,33490	0.99998	3919.000		•	MS6102	
M60	LEFT FRONT		18.97590	1.00000	1969.000			MS63011	0
¥20	RIGHT FRONT	IN OPEN	16.54490	1.00000	1963.000	78576.000	55922.000	MS63011	0
760	LEFT FRONT	IN OPEN	21.77830	1.0000	1922.000	78598.000	55966.000	MS63011	0
₩80	LEFT FRONT	IN OPEN	23.47820	1.00000	1985,000	78620.000	55906.000	MS63011	0
ns:z	FRONT	IN OPEN	18.93070	1.00000	3130.000	79143.000	54847.000	MS63012	0
M113	RIGHT SIDE	FRONT OF TREES	15.46010	0.99996	3080,000	78173.000	54895.000	MS63012	٥
183	REAR	IN OPEN	13,46600	0.99954	3045,000	79175.000	54944.000	MS63012	0
M113	LEFT SIDE	IN OPEN	19.67030	1.00000	3078.000	79208,000	54919.000	MS63012	0
180	LEFT SIDE	TOP SECWING	31.17460	1,00000	1656.000	78038.000	\$6371.000	MS6403	0
<b>18</b> 0	RIGHT SIDE	TOP SHOWING	22,26800	1.00000	1590,000	78025,000	56436.000	PS6493	0
28U	LEFT FROM		14.80770	1.00000	1510.000	78899.000	56514.000	HS6403	0
M113	RIGHT FRONT	TOP SHOWING	7.88870	0.99742	1646.000	79070.000	\$6398,000	MS6403	0
125	RICHT REAR	IN OPEN	10.92790	0.99956	1483,000	79013.000	56553.000	MS6403	0
Š	RIGHT FROM	IN OPEN	20.46010	0.99993	2510.810	79085.000	55475,000	MS6603	•
nsz	REAR	IN OPEN	22.49280	1.00000	2535,700	79127.000	55462.000	MS6603	0

TARGET RADAR METRICS

global target prominence measured relative to target-free background

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; 1 1 2 2 3 4 5 6 7 7	slevation setting	00000
1	t• 10	MS6603 MS6701 MS6701 MS6701
	UTM easting (meters)	55519,000 55533,000 55541,000 55486,000 55486,000
	UTM northing (meters)	79165.000 78192.000 78471.000 78504.000
ire of power	range (meters)	2494.040 2490.270 2333.730 2380.870 2414.820
ower METRIC-measu (continued)	global target prominence	0.95532 0.96124 1.00000 0.96893 0.88149
BAMD-total p	log metric velue	9.64760 12.42290 23.27680 18.31570 7.50200
SAMD-total power METRIC-measure of power	Comment	WITE BRUSE IN OPEN IN OPEN IN OPEN PART BEHIND HILL
: : : : : : : :	orientation	LEFT FRONT LEFT FRONT RIGHT FRONT REAR LEFT SIDE
	target	M60 M113 M113 ZSC M25

TARGET RADAR METRICS

global target prominence measured relative to target-free background

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BAMD-to

elevetion setting	0	0	o	0	6	0	0	0	0	0	0			-	0	0	0	-	-			,		•••		-	_	0	0	0	0	0	o	o	0			-4	-			٠, ١-
10 10	MS 5502	MS 5502	MS5502	MS5502	MS5503	MS5503	MS5503	PSS 504	MS 5504	MS 5601	MS 5601	MS5602	MS 5602	MS5602	MS 5603	MS5603	MS 5603	MS 5604	MS5604	HS 3604	MS5604	MS 5604	MS 5604	HS5702	MS5702	MS 5702	MS5702	MS5703	MS5703	MS5703	MS5703	HS 5703	HE5704	MS5704	MS5704	MS 5801	MS5801	MS5801	MS \$802	NS5802	1000	1000 E
UTH easting (meters)	60586.090	60691.750	60568.220	60451.570	57970.690	57878.950		58849.070	58836,180	56585.940	56700,860	59926.980	59919,850	59950.970	56170.000	56146.420	56029.000	59496,020	59440.020	58414.950	59421.170	58382,500	59334.490						٠		•											
UTM northing (meters)	75842.540	75544.870	75641.670	75653.160	78488.700	78474.130		77301.210	77218.320	77894.760	78003.890	75865.740	75702.860	75576.280	77928.700	77890.260	77877.480	76556.390	76538.660	78876.870	76387.810	76488.520	76435.380	٠		•		ż	•	٠	٠		•			•	•					
range (meters)	4204.000	4298.000	4166.000	4120.000	1703.000	1782,000	1736,000	2335.242	2419.179	3170.000	3015,000	3791.000	3950,000	4080,000	3511.000	3550,000	3660.000	3041,000	3065.000	2925.000	3214.000	3112.000	3163.000	4456.000	4570.000	4456,000	4574.000	3880.000	3819.000	3809.000	3909.000	3991.000	2459.000	2349.000	2213.000	2657,000	2544.000	2612.000	4596,000	4565,000	4456 000	4474 000
global target prominence	0.99940	0.87578	0.99977	1.00000	1.00000	0.99956	1,00000	0.99937	1.0000	1.00000	0.99649	0.99974	0.99987	1.0000	0.99942	1,00000	0.99979	0.99981	0.99932	0.89520	0.99859	0.89768	0.99602	1,00000	0.99889	0.99979	0.88840	0.89790	98888 0	0.89575	1.00000	0.84873	0.99912	1.00000	0,99981	0.99792	0.89792	0.91292	86568 0	0.99979	00000	7,0000
log metric value	10.21580	1.73550	13.71040	21.52520	15.80930	6.54200	14.54120	6.40880	20,25610	12.87550	5.47220	9.31470	8 75760	13,53500	11,17530	16,15860	14.75810	11,95390	9.68370	6.61140	8.77420	7.90240	7,10960	13.98080	7.94360	10.85890	9.40880	7.13820	10.90030	6.09530	13.79880	3.08050	6.00740	16,22570	8.6566	9.9150.	8.91500	2.78460	10.81160	9.01390	11 27880	11 07340
comment	IN OPEN	IN OPEN	IN OPEN	IN OPEN	SHADED	SHADED		SHADED	IN OPEN	IN OPEN	IN OPEN	IN OPEN	IN OPEN	IN OPEN	IN OPEN	BEHIND TREE	IN OPEN	IN OPEN	IN OPEN	IN OPEN	SHADED	IN OPEN	BEHIND TREES																			
orientation	ROM	EAR	LIGHT FRONT	EFT FROMT	PRONT	ROM	OVER	EAR	TORY SIDE	ROIL	LIGHT SIDE	LIGHT FRONT	PROMT	LEFT SIDE	LEAR	PRONT	EFT SIDE	MGRT SIDE	MIGHT SIDE	EFT REAR	FRONT	MIGHT SIDE	EFT SIDE	EFT REAR	IIGHT FRONT	EFT FRONT	LIGHT FRONT	EFT FRONT	FRONT	١/٧	IGHT FRONT	LIGHT FROM	LIGHT PROPER	LIGHT FRONT	EFT FRONT	HGHT FROMT	EFT PROMT	ROKT	TORT PROFF	LIGHT FRONT	Tace	TALATE PROMES
target o	M113 F	-	_	~		_	_	_	UHI	· -	-	_			H35		. =		_	AH1	_	_		-1	_	_	_	M60 1.1	_	=	-	_	_	_		H35 RI	-	, E	_	-		•

TARGET RADAR METRICS

global target prominence measured relative to target-free background

			,			E S	E .		
target	orientation	comment	log metric value	global target prominence	renge (meters)	northing (meters)	essting (meters)	# C	elevation setting
nsz	REAR		18,57660	1,00000	1481.000			MS 5803	
160	REAR		5.74320	0.84843	1352.000	•		MS 5803	
4113	FRONT		15.60030	0.89885	1484.000			MS5803	-
480	LEFT SIDE		14.59570	0.89986	1376.000			MS5803	
4113	FRONT		11.57820	0.98865	4570.000			MS 5804	~
460	RIGHT SODE		2.57850	0.84537	4456.000			MS5804	-
H113	LEFT SIVE	UNDER TREES	8.55770	0.99792	3878,000	79437.000	54153,000	MS6001	п
435	LEFT FRONT	UNDER TREES	8.24610	0.89713	3898.000	79490.000	54147,000	MS6001	-
M3.5	LEFT FRONT	UNDER TREES	7.69990	0.99597	3919.000	79570.000	54151.000	MS6001	7
AH1	LEFT SIDE	BEHIND TREETOP	3.05360	0.95807	4184.000	79273.000	53793.000	MS 6002	0
M113	UNICHOMIA	BEHIND TREETOP	4.84530	0.98415	4138.000	79292.000	53845.000	MS6002	0
H113	UNICHONS	BEHIND TREETOP	2.84780	0.94903	4170.000	79319.000	53818,000	MS 6002	٥
H35	RIGHT SIDE	IN OPEN	7,77950	0.99772	3845.000	79466.000	54195.000	MS6002	٥
H35	RIGHT SIDE	BEHIND TREETOP	7,00700	0.99584	3852.000	79495.000	54197.000	MS6002	0
<b>H</b> 60	LEFT SIDE	IN OPEN	7.25410	0.99623	3643,000	79424.000	54185.000	MS6004	0
M113	RIGHT FRONT	IN OPEN	14.25450	1.00000	3878.000	79437.000	54153,000	MS6004	0
M113	LEFT FRONT	UNDER TREES	6.82060	0.99518	3898.000	79490.000	54147.000	MS6004	0
SE	RIGHT SIDE	IN OPEN	18.85090	1,00000	3918,000	79570.000	54151.000	MS6004	0
H35	FRONT	BEHIND TREETOP	11.38230	0,88942	4184,000			MS6101	0
H35	RIGHT SIDE	BEHIND TREES	3.32810	0.96818	4169.000	79397.000	53839,000	MS6101	0
9	LEFT SIDE	IN OPEN	5.16020	0.98001	3643.000	78424.000	54185,000	MS6101	0
230	LEFT FRONT	NEAR TREE	6.85870	0.99657	3898.000	79490.000	54147,000	MS6101	0
920	RIGHT SIDE		12.57250	0.99968	3919.000			PS6101	0
H113	LEFT FRONT	BEHIND TREETOP	2.22350	0.92290	4142,000	79372.000	53860,000	MS6102	
H113	FRONT	IN TREES	16.37040	1.00000	3898,000	79490.000	54147,000	MS6102	-
nsz	LEFT SIDE		9.44560	0.99810	3919.000			MS6102	<b>~</b>
990	LEFT FRONT		20,11020	1.00000	1969.000		٠	MS 63011	0
₩ 1	RIGHT FRONT	IN OPEN	15.61090	0.99981	1963.000	78576,000	55922.000	MS63011	0
0	LEFT FRONT	IN OPEN	14.53160	0.98971	1922.000	78598.000	55966.000	MS63011	0
460	LEFT FRONT	IN OPEN	26.21750	1.00000	1985.000	78620.000	55906,000	MS63011	٥
=	FRONT	IN OPER	12.56830	0.99926	3130.000	79143.000	54847,000	MS63012	o
4113	RIGHT SIDE	FROMT OF TREES	12,71200	0.99928	3090,000	79173.000	54896,000	MS63012	٥
CH1	REAR	N OPEN	8.17440	0.99516	3045,000	79175,000	54944.000	MS63012	0
M113	LEFT SIDE	IN OPEN	19, 13150	1.00000	3078,000	79208.000	54919,000	MS63012	0
460	LEFT SIDE	TOP SHOWING	29,38600	1.00000	1656,000	79038.000	56371.000	MS6403	0
960	RIGHT SIDE	TOP SHOWING	30.62450	1.00000	1590,000	79025.000	56438.000	MS6403	0
rsn	LEFT FRONT	TOP SHOWING	23.28850	1.00000	1510.000	78999.000	56514.000	PS5403	0
4113	RIGHT FRONT	TOP SHOWING	8.43820	0.99797	1645.000	79070.000	56398,000	MS6403	0
185	RIGHT REAR	IN OPEN	11.67380	0.88939	1483.000	79013.000	56553.000	MS6403	0
460	RIGHT FRONT	IR OPEN	13.75420	0 00072	2610 016	20004	46174 555	******	•
				7.000,0	240.040	2007.7008.	224/3.000	2000	>

TARGET RADAR METRICS

global target prominence measured relative to target-free background

	UIM UIM OCTATION OCTATION OCTATION (Meters) (Meters) ID setting	79155.000 55519.000 PIS6603 0 79182.000 55533.000 PIS6603 0 7847.100 55541.000 PIS6701 0 78554.000 55496.000 PIS6701 0 78559.000 55466.000 PIS6701 0
o clutter	range no: (meters) (me	2494,040 7916 2490,270 7916 2333,730 7847 2380,870 7856 2414,820 7856
er METRIC=signal t (continued)	global target prominence	0,99030 0,95589 0,99020 0,99073 0,87386
BAND-total pow	log metric value	6.70750 4.08750 7.69180 7.78520 2.83750
Continued)	comment	WITH BRUSH IN OPEN IN OPEN IN OPEN PART REHIND HILL
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	orientetion	LEFT FRONT LLEFT FRONT RIGHT FRONT REAR
} 1 1 1 1 1 1 1 1 1 1 1	t argaet	M60 M113 M113 280

IARGET RADAR WETRICS global target free background

BANDatotal power MIRICavariance

			log metric	globel target	range	UTM	UTM easting	test	elevetion
target	orientation	comment	value	prominence	(meters)	(meters)	(meters)	Ħ	setting
M113	FRONT	IN OPEN	3.60450	0.99668	4204.000	75642.540	60586.090	MS5502	0
1460	REAR	IN OPEN	8.70060	0.99926	4298.000	75544.870	60691.750	MS5502	0
Med	RIGHT FRONT	IN OPEN	-0.56820	0.98000	4155.000	75641.670	60568.220	MS5502	0
M35	LEFT FRONT	IN OPEN	15.74550	1.00000	4120.000	75653,160	60451.570	MS 5502	a
nsz	FRONT	SHADED	12,23960	1.00000	1703.000	78488,700	57970.690	MS 5503	0
M35	FROMT	SHADED	1.01760	0.87093	1782.000	78474, 130	57878.950	MS5503	o
99H	MOVER		7.00250	1.00000	1738.000	•		MS5503	0
H60	REAR	SHADED	3,16720	0.89898	2335,242	77301.210	58849.070	MS5504	0
UHI	RIGHT SIDE	IN OPEN	12.86060	1.00000	2419.179	77218.320	58836.180	HS5504	0
DECOY	FRONT	IN OPEN	3.91700	1.00000	3170.000	77894.780	56585.840	HS 5601	0
<b>1935</b>	RIGHT SIDE	IN OPEN	-2.74160	0.93824	3015.000	78003.890	56700.860	MS 5601	٥
M113	RIGHT FRONT	IN OPEN	-0.32640	0,98723	3791.000	75865,740	59926.980	MS 5602	-
UHI	FRONT	IN OPEN	0.32090	0.99137	3950,000	75702.860	59919.850	MS 5602	**
M60	LEFT SIDE	IN OPEN	5.74710	0.88998	4080.000	75576.280	59950.970	MS 5602	~*
M35	REAR	IN OPEN	8.01570	1.00000	3511.000	77828.700	56170.000	MS5603	0
X35	FRONT	BEHIND TREE	4.75700	0.99868	3550.000	77890.260	56146.420	MS 5603	0
ns:2	LEFT SIDE	IN OPEN	7.88460	1.00000	3660.000	77877.480	56029.000	MS 5603	0
M60	RIGHT SIDE	IN OPEN	4.48270	0.99784	3041.000	76566.390	59486.020	MS 5604	
H60	RICHT SIDE	IN OPEN	0.53720	0.97378	3065.000	76538,660	59440.020	MS5604	-
ABI	LEFT REAR	IN OPEN	-5.93280	0.75510	2925.000	76676.870	59414.960	MS 5604	
M35	FRONT	SHADED	6.15890	0.98937	3214.000	76387.810	59421, 170	MS 5604	7
M113	RIGHT SIDE	IN OPEN	3.27910	0.88465	3112.000	76488.520	59382, 500	MS5604	-
M113	LEFT SIDE	BEHIND TREES	-0.83980	0.94538	3163.000	76435.380	59334,490	MS 5604	
₩ 09₩	LEFT REAR		5.35870	0.99848	4456.000	٠	٠	MS 5702	
H113	RIGHT FROM		0.38770	0.97846	4570.000	·		MS 5702	-
M60	LEFT FRONT		4.33710	6.98848	4456.000			MS5702	-4
M35	RIGHT FRONT		1.39380	0.98571	4574.000		٠	MS5702	-
994	LEFT FRONT		-0.22820	0.98231	3880,000			MS5703	0
M35	FRONT		6.75520	1.00000	3919,000			MS5703	0
DECOX	H/A		-0.17860	0.98231	3809,000	•		MS5703	0
M60	RIGHT FRONT		5.77380	1,00000	3909.000	•		MS5703	0
M113	RIGHT FRONT		0.10970	0.96641	3991.000			PS 5703	٥
Meo	RIGHT FRONT		~7.83630	0.71670	2469.000			MS 5704	0
H113	RIGHT FRONT		11.87350	1,00000	2349.000			MS5704	0
M35	LEFT FRONT		3.16640	1.00000	2213.000			MS5704	0
M35	RIGHT FRONT		6.89310	1.00000	2657.000		٠	MS5801	٦
M60	LEFT FRONT		0.26000	0.87917	2644.000			MS5801	-
M113	FRONT		-5.06520	0.86088	2612.000	•		MS 5801	
<b>M35</b>	RICHT FRONT		4.41710	0.99847	4596.000			MS 5802	
M113	RIGHT FRONT		2.42470	0.89546	4565.000			MS 5802	-
DECOY	FRONT		0.14060	0.98403	4456,000	٠		MS 5802	-1
1460	RIGHT FRONT		-4.23210	0.89717	4574.000			MS5802	-

TARGET RADAR METRICS

global target prominence measured relative to target-free background

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			441	tour telefor		WID	ert tree	*	elevation
target	orientetion	comment	value	prominence	(meters)	(meters)	(meters)	a	setting
082	REAR		13.44620	1.00000	1481.000			MS 5803	-
094	REAR		-4.85770	0.87960	1352,000			MS5803	-
H113	FRONT		-0.80860	0.96844	1484,000		٠	MS 5803	1
980	LEFT SIDE		9.14910	1.00000	1376.000	,		MS 5803	-
M113	FRONT		10,41580	1,00000	4570.000		,	MS5804	-
980	RIGHT SIDE		4.25580	0.88804	4456.000	-		MS5804	-
M113	LEFT SIDE	UNDER TREES	4.68570	0.89817	3878.000	79437,000	54153.000	MS6001	-
200	LEFT FRONT	UNDER TREES	6.65270	0.89853	3698.000	78490.000	54147.000	MS6001	~
X3.5	LEFT FRONT	UNDER TREES	5.33890	0.99837	3919.000	79570,000	54151.000	MS6001	~
AB1	LEFT SIDE	BERIND TREETOP	-15.28170	0.69981	4184.000	79273.000	53793,000	MS6002	0
M113	UNICHOWIN	BEHIND TREETOP	-6.76700	0.87402	4138.000	79292,000	53845.000	MS6002	0
H113	UNICHONN	BEHIND TREETOP	-13.31010	0.76715	4170.000	79319.000	53818.000	MS6002	0
£35	RIGHT SIDE	IN OPEN	5.63560	0.99917	3845,000	79456.000	54196.000	MS6002	0
H35	RIGHT SIDE	BEHIND TREETOP	2,43840	0.99738	3852.000	79495.000	54197.000	MS6002	0
M60	LEFT SIDE	IN OPEN	3.15590	1.00000	3843,000	79424.000	54185.000	MS6004	0
M113	RIGHT FRONT	IN OPEN	7.38800	1.00000	3878.000	78437,000	54153.000	MS6004	•
M113	LEFT FRONT	UNDER TREES	0.92520	0.99861	3898.000	79480.000	54147.000	MS6004	o
H35	RIGHT SIDE	IN OPEN	10.72730	1.00000	3919,000	79570.000	54151.000	MS6004	0
435	FRONT	BEHIND TREETOP	9.05990	1.00000	4184.000	٠		MS6101	0
M35	RIGHT SIDE	BEHIND TREES	-4.81350	0.96247	4169.000	79397,000	53839 000	MS6101	0
He0	LEFT SIDE	IN OPEN	5.30400	0.99846	3843.000	79424.000	54185.000	HS6101	0
US2	LEFT FRONT	NEAR TREE	0.13380	0.88434	3888.000	79490.000	54147.000	MS6101	0
9	RIGHT SIDE		4.02340	0.98846	3919.000	•	•	MS6101	0
H113	LEFT FRONT	BEHIND TREETOP	-1.96200	0.97328	4142.000	79372.000	53860.000	MS6102	-
M113	FRONT	IN TREES	11.34360	1.00000	3898.000	79490,000	54147.000	MS6102	-
022	LEFT SIDE		6.11780	1.00000	3919.000		٠	MS6102	~
M60	LEFT FRONT		7.16820	1.00000	1969.000			MS63011	0
160	RIGHT FRONT	IN OPEN	5.51240	1.00000	1963,000	78576.000	55922.000	MS63011	0
M60	LEFT FRONT	IN OPEN	9.81010	1.00000	1922.000	78598.000	55966.000	MS63011	0
H60	LEFT FRONT	IN OPEN	9.47100	1.00000	1985.000	78620.000	55906,000	MS63011	0
nsz	FRONT	IN OPEN	4.21170	1.00000	3130.000	79143.000	54847.000	MS63012	0
M113	RIGHT SIDE	FRONT OF TREES	5.61210	1.00000	3090.000	78173.000	54896.000	MS63012	0
UH1	REAR	IN OPEN	0.34460	0.99147	3045.000	79175.000	54944.000	MS63012	0
H113	LEFT SIDE	IN OPEN	6.48960	1.00000	3078.000	79208.000	54919.000	MS63012	0
460	LEFT SIDE	TOP SHOWING	16.47390	1.00000	1656.000	79038.000	56371,000	MS6403	٥
280	RIGHT SIDE	TOP SHOWING	12.48140	1.00000	1590.000	78025.000	56438,000	MS6403	0
nsz	LEPT PRONT	TOP SHOWING	4.79460	1.00000	1510.000	78999.000	56514.000	MS6403	0
4113	RIGHT FRONT	TOP SHOWING	-2.72160	0.98348	1646.000	79070.000	\$6398.000	MS6403	0
JEI	RIGHT REAR	IN OPEN	-0.11450	0.99860	1483.000	78013.000	56553.000	MS6403	٥
9	Tangs Panta	name at	T ORRES						•
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		> 000m · /		2510.510	79085.000	55475,000	<b>FS6603</b>	0

	1 1 1 1 5 8 8 8 8 8	elevation setting	0000	
		test ID	MS6603 MS6701 MS6701 MS6701 MS6701	
!	; ; ; ; ;	UTM easting (meters)	5519.000 55533.000 55541.000 55496.000	
OTSWIND BEST	1 1 2 3 4 4 6	UTM northing (meters)	79165.000 79192.000 78471.000 78504.000	
a to target-	estanca	range (meters)	2494,040 2490,270 2333,730 2380,870 2414,820	
global target prominence measured relative to target-free background	- BAND-total power METRIC-variance (continued)	global target prominance	0.97826 0.94845 0.99929 0.99775	
t prominence :	BAND=tot	log metric value	3.52800 1.51820 7.57830 4.7550 -5.21570	
Global targe		coment	WITH BRUSH IN OPEN IN OPEN IN OPEN FART BEHIRD HILL	
	1	orientation	LEFT FRONT LEFT FRONT RIGHT FRONT REAR LEFT SIDE	
		t e t e	M113 M1.3 2°U M35	

TARGET RADAR METRICS

LATER OF CT GRIENELLE COMMENT.  LOS SECTOR  HILL SPORT  HILL SPORT									
Comment						MIN	Æ		
FRONT   IN OPEN   IN OPE			log metric	global target	renge	northing	easting	test	• Lev
FRONT   IN OPEN   11,93660   0.99960   4204,000   7544,500   7544,500   7544,500   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7544,100   7542,100   7544,100   754			value	prominence	(meters)	(meters)	(meters)	a	8
RIGHT         IN OPER         17 7844         0 98986         4286.00         75544. 870           LET FRONT         IN OPER         9.65930         1.00000         4120.00         75541. 870           LET FRONT         SEADED         18.3790         1.00000         4120.00         75541. 870           HOVER         SEADED         18.3790         1.00000         4120.00         75541. 870           HOVER         SEADED         18.3790         1.00000         4120.00         7554. 130           HOMER         IN OPER         11.8050         1.00000         2139. 200         7844. 130           RIGHT         IN OPER         11.62760         1.00000         2139. 200         7844. 130           RIGHT         IN OPER         1.62760         1.00000         2139. 200         7845. 70           RIGHT         IN OPER         1.62760         0.9993         395. 000         7502. 26           REAM         IN OPER         1.24340         0.9993         395. 000         7502. 26           REAM         IN OPER         1.24340         0.9993         395. 000         7502. 26           RIGHT         IN OPER         1.24340         0.9993         395. 000         7502. 26 <tr< td=""><td></td><td>IN OPEN</td><td>11.95660</td><td>0.88880</td><td>4204,000</td><td>75642.540</td><td>60686.090</td><td>MS5502</td><td></td></tr<>		IN OPEN	11.95660	0.88880	4204,000	75642.540	60686.090	MS5502	
RIGHT FRONT IN OPEN		IN OPEN	17.73640	0.99986	4298.000	75544.870	60691,750	MS5502	
LETT FRONT IN OPEN   18.4989   1.00000   1702.00   2448.70   248		H	9.65650	0.88924	4166.000	75841.670	60558.220	MS5502	
PROPET   SHANED   18.37984   1.00000   1703.000   7448.70   700000   1703.000   74474.130   7400000   740000   740000   74000000   74000000   7400000   740000000   740000000   74000000   740000000   740000000   740000000   740000000   740000000   74000000   740000000   7400000000   740000000   740000000   740000000   740		H	28.49090	1.00000	4120.000	75653.160	60451.570	HS 5 5 0 2	
PRONT   SHADED   18,8550   0,99582   1782, 000   7847, 130   1782, NEW		SHADED	19.37990	1.00000	1703.000	78488.700	\$7970,690	MS5503	
Marche   M		SHADED	9.66550	0.99582	1762.000	78474.130	57878.950	HS5503	
REAR         SEADED         11.88050         1.00000         2.335.242         77301.210           FEGNIT         IN OPER         11.04830         1.00000         2419.179         77218.220           FEGNIT         IN OPER         1.04830         1.00000         2419.179         77218.220           RIGHT         SIN OPER         1.37860         0.89831         3791.000         7864.786           RIGHT         SIN OPER         1.6.26260         0.89831         3791.000         7572.660           FROMT         IN OPER         1.41740         0.89896         3550.000         7572.626           RAA         IN OPER         1.2.44380         0.89896         3550.000         7782.620           RIGHT         SIDE         IN OPER         1.2.27710         0.89896         3550.000         7782.620           RIGHT         SIDE         IN OPER         1.2.27710         0.89896         3560.000         7782.620           RIGHT         SIDE         IN OPER         1.2.27710         0.89896         3560.000         7782.760           RIGHT         SIDE         IN OPER         1.2.27710         0.89896         3560.000         7782.630           RIGHT         SIDE         BEHIND TREE </td <td></td> <td></td> <td>18.37570</td> <td>1.00000</td> <td>1738.000</td> <td></td> <td>,</td> <td>MS5503</td> <td></td>			18.37570	1.00000	1738.000		,	MS5503	
RIGHT SIDE         IN OPERA         11.04630         1.00000         2449.179         77218.220           RIGHT SIDE         IN OPERA         11.04630         1.00000         3170.000         750.250         780.250           RIGHT SIDE         IN OPERA         11.62760         0.88991         3791.000         750.250         780.250           REAR         IN OPERA         11.62760         0.89993         3950.000         750.250         766.250           REAR         IN OPERA         12.46340         0.89996         3511.000         7782.20         766.250           REAR         IN OPERA         12.46340         0.89996         3511.000         7782.00         7782.00           REAR         IN OPERA         12.27710         0.89996         3511.000         7782.00         7782.00           RIGHT SIDE         IN OPERA         12.27710         0.89954         3041.000         7525.000         7782.00           RIGHT SIDE         IN OPERA         12.27710         0.89954         3041.000         7538.00         7783.00           RIGHT FRONT         IN OPERA         12.27710         0.89967         3112.000         7783.00           RIGHT FRONT         IN OPERA         13.3000         4455.000		SHADED	11.89050	1.00000	2335.242	77301.210	58849.070	MS 5504	
FROM I         IN OPER         16.3788         1.00000         3170.000         77864-780           RIGHT SIDE         IN OPER         3.68600         0.89831         3.915.000         7592.340           FRONT         IN OPER         1.62780         0.89831         3791.000         7592.540           FRONT         IN OPER         10.28280         0.89836         3791.000         75702.860           FRONT         IN OPER         12.4336         0.89896         3550.000         7792.700           FRONT         IN OPER         12.43740         0.89896         3560.000         7782.700         7782.700           RIGHT SIDE         IN OPER         12.27710         0.89896         3660.000         7787.460           RIGHT SIDE         IN OPER         12.27710         0.89896         3660.000         7787.460           LEFT RAR         IN OPER         12.27710         0.89896         3660.000         7787.400           RIGHT SIDE         IN OPER         12.3279         0.89896         3660.000         7787.400           LEFT SIDE         IN OPER         1.3370         0.99896         3660.000         7783.500           LEFT FRONT         IN OPER         1.33070         1.00000	-	IN OPEN	11.04630	1.00000	2419.179	77218.320	58836,180	MS 2 504	
RIGHT SIDE         IN OPER         3.86600         0.87431         3715.000         78003.990           RIGHT FRONT         IN OPER         10.26280         0.889391         3791.000         75702.860           FEGNT         IN OPER         10.26280         0.89893         3791.000         75702.860           REGNT         IN OPER         12.26280         0.89896         3551.000         75702.860           REGNT         IN OPER         12.47740         0.89896         3551.000         7577.480           LEFT SIDE         IN OPER         12.27710         0.89896         3551.000         7787.480           RIGHT SIDE         IN OPER         12.27710         0.89896         3510.000         7787.480           RIGHT SIDE         IN OPER         12.3770         0.89896         3510.000         7787.480           RIGHT SIDE         IN OPER         1.00000         3514.000         7648.3			16.57080	1.00000	3170.000	77894.780	\$6585.940	HS 5601	
RIGHT FRONT IN OPEN   11.62760 0.88891 3791.000 75865.740	_		3.80600	0.97611	3015.000	78003,890	\$6700.850	MS 5601	
FRONT   IN OPERA   10.26280   0.89993   3950.000   75702.860	_		11.62760	0.88881	3781.000	75865.740	59926.980	MS 5602	
LEFT SIDE	_		10.26280	0.99983	3950.000	75702.860	59919.650	MS 5602	
REAT         IN OPERA         12,40340         0.98980         3550.000         77800.260           LETT SIDE         IN OPERA         12,40340         0.98968         3550.000         77877.480           RIGHT SIDE         IN OPERA         12,2770         0.98954         3041.000         7556.390           RIGHT SIDE         IN OPERA         13,2770         0.98954         3041.000         7537.480           RIGHT SIDE         IN OPERA         3,8227         0.98910         3065.000         77877.480           RIGHT SIDE         IN OPERA         3,8227         0.98910         3065.000         7546.580           RIGHT SIDE         IN OPERA         12,8070         1,00000         3214.000         7648.520           LEFT ROAT         10,0040         0.98967         3112.000         7648.520         3163.000           RIGHT FRONT         10,0040         0.98967         455.000         7648.530           LEFT FRONT         10,0000         4456.000         7648.530         7648.500           RIGHT FRONT         10,0000         456.000         7648.530         7648.500           RIGHT FRONT         10,0000         2450.000         7648.500           RIGHT FRONT         10,0000		M3dO MI	16.50950	1.0000	4080.000	75576.280	38830.870	20905	
FRONT   ESHLIND TREE		IN OPEN	12.46360	O5685.0	3511.000	11000 040	201/0.000	20003	
LETT SIDE IN OPEN 12.27710 0.99910 3065.000 76556.390 RIGHT SIDE IN OPEN 13.27710 0.99914 3041.000 76556.390 RIGHT SIDE IN OPEN 13.27710 0.99914 3041.000 76556.390 FRONT SIDE IN OPEN 13.2770 0.99910 3024.000 76556.390 RIGHT FRONT 10.0000 3214.000 76465.200 RIGHT FRONT 10.0000 4456.000 76435.380 LEFT FRONT 10.0000 4456.000 76435.380 LEFT FRONT 10.0000 4456.000 76435.380 RIGHT FRONT 10.0000 3919.000 76435.380 RIGHT FRONT 10.0000 3919.000 76435.380 RIGHT FRONT 10.0000 3919.000 76435.380 RIGHT FRONT 10.0000 2469.000 2469.000 RIGHT FRONT 10.0000 2469.000 2469.000 RIGHT FRONT 10.0000 2557.000 2557.000 RIGHT FRONT 10.0000 2557.000 2557.000 RIGHT FRONT 10.0000 2557.000 2557.000 RIGHT FRONT 10.5590 1.00000 2557.000 7565.000 RIGHT FRONT 10.5590 1.00000 7565.000 7565.000 RIGHT FRONT 10.5590 1.00000 7565.000 7565.000 RIGHT FRONT 10.5590 1.00000 7565.000 7	_	BEHIND INCE	11.41/40	3388.0	3330.000	7480.200	\$60.000	MC 5603	
LEFT REAR   14 OPER   1.55270   0.99910   3065.000   76376.660		THE OPEN	12.27710	0.8888.0	3041.000	76566 390	59496.020	MS 5604	
LEFT REAR   18 OPEN   5.822'7   0.97963   2525.000   7656.870     REGNT		THE COPIES	11.53270	0.89910	3065.000	76538,660	59440.020	MS 5604	
FRONT         SHADED         16.03530         1.00000         3214.000         76387.010           RIGHT SIDE         IN OPERA         12.8870         0.98867         3112.000         76488.520           LEFT SIDE         BERIND TREES         1.00000         4456.000         76435.380           LEFT FRONT         10.04640         0.98902         4570.000         76435.380           RIGHT FRONT         10.0000         3918.000         76480.000         76480.000           RIGHT FRONT         0.05230         0.98943         3893.000         76480.000           RIGHT FRONT         1.00000         2249.000         2249.000         2249.000           RIGHT FRONT         1.00000         2249.000         2249.000         2249.000           RIGHT FRONT         1.00000         2257.000         2257.000           RIGHT FRONT         1.00		IN OPEN	5.822/3	0.97983	2925.000	76676.870	59414.960	MS 5604	
RIGHT SIDE         IN OPEN         12.88760         0.88867         3112.000         76486.520           LEFT SIDE         BEHIND TREES         4.84770         1.00002         3162.000         76435.380           LETT REAR         1.31070         1.00000         4456.000         76435.380           RIGHT FRONT         10.04640         0.88902         4570.000         4456.000           RIGHT FRONT         17.31070         1.00000         4456.000           RIGHT FRONT         13.00010         1.00000         4456.000           RIGHT FRONT         1.00000         3918.000         7.00000           RIGHT FRONT         1.00000         3918.000         7.00000           RIGHT FRONT         0.02230         0.99443         3991.000           RIGHT FRONT         1.00000         2249.000         2469.000           RIGHT FRONT         1.00000         2249.000         255.000           RIGHT FRONT         1.00000         255.000         255.000           RIGHT	_	SHADED	16.03530	1,00000	3214.000	76387.610	59421.170	MS 2604	
LEFT RIDE DERIND TREES 4.84770 0.87002 3153.000 76435.380 1  LETT REAR 17.0000 4456.000 4456.000 1.00000 1.00000 4456.000 1.00000 1.00000 4456.000 1.000000 1.00000 1.00000 1.00000 1.00000 1.00000 1.000000 1.00000 1.00000 1.00000 1	_	IN OPEN	12.88760	0.99967	3112.000	76488.520	59382.500	MS 5604	
LETT REAR   17.31070   1.00000     LETT REAR   17.31070   1.00000     LETT FRONT   17.31070   1.00000     LETT FRONT   17.31070   1.00000     RIGHT FRONT   20.23560   1.00000     W.A.   20.3350   1.00000     RIGHT FRONT   20.3350   0.9913     RIGHT FRONT   0.0230   0.9913     RIGHT FRONT   19.33790   1.00000     LETT FRONT   19.33790   1.00000     LETT FRONT   19.33790   1.00000     RIGHT FRONT   13.3790   1.00000     RIGHT FRONT   13.23790   1.00000     RIGHT FRONT   13.23790   1.00000     RIGHT FRONT   15.23490   1.00000	_	BERIND TREES	4.84770	0.97002	3163.000	76435.380	59334,490	MS 2604	
RIGHT FRONT	_		17.31070	1.00000	4456.000		٠	HS 5702	
LET FRONT NA RIGHT FRONT RIGHT	_		10.04840	0.99902	4570.000			HS 5702	
LEFT FRONT	LEFT F		17.31070	1.00000	4456.000		٠	MS5702	
FRONT 10.67850 0.88991 FRONT 20.23860 1.00000 W.A. RIGHT FRONT 6.73570 0.99723 RIGHT FRONT 0.02230 0.99943 RIGHT FRONT 0.02230 0.99943 RIGHT FRONT 10.00000 RIGHT FRONT 10.52990 1.00000 RIGHT FRONT 10.53990 1.00000 FRONT 10.00000 RIGHT FRONT 10.23490 1.00000 RIGHT FRONT 10.23490 1.00000 RIGHT FRONT 10.23490 1.00000 RIGHT FRONT 0.00000 RIGHT FRONT 10.00000	RIGHT	<b>6</b>	15.00610	1.00000	4574,000	,	•	MS 5 7 0 2	
FRONT   20.2350 1.00000			10.67850	166660	3680.000	•	٠	MS5/03	
N.A			20.23360	7.00000	3919.000	•	٠	FD/CSH	
RIGHT FRONT   13.867JU 1.00000   1	_		6.73570	0.89725	3809.000		•	MS5/03	
RIGHT FRONT   0.9443   RIGHT FRONT   0.9943   RIGHT FRONT   0.05310   0.99343   RIGHT FRONT   23.62700   1.00000   EFT FRONT   15.27310   1.00000   EFT FRONT   15.27310   1.00000   EFT FRONT   12.83780   1.00000   1.00000   EFT FRONT   12.83780   1.00000   EFT FRONT   12.83780   1.00000   EFT FRONT   13.25490   1.00000   EFT FRONT   15.25490   1.00000   1.00000   1.00000   1.00000   EFT FRONT   15.25490   1.000000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.0000			15.66710	1.00000	3808,000		•	50/03	
RIGHT FRONT	_		8.94820	0.99943	3991.000	•	•	FS5703	
RIGHT FRONT   15.2700   1.000000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000	_		0.05230	0.93100	2469,000			HS5704	
LET FRONT 15.27310 1.00000  RIGHT FRONT 18.55900 1.00000  LET FRONT 13.93790 1.00000  FRONT 6.99560 0.99476  RIGHT FRONT 12.62540 1.00000  RIGHT FRONT 15.25490 1.00000  FRONT 6.82840 0.99433	_		23.82700	1.00000	2349.000			MS 5704	
RIGHT FRONT	_		15.27310	1.00000	2213.000		•	M25704	
LEFT FRONT 13.83790 1.00000 1.00000 1.00000 1.00000 1.00000 1.00010 1.000000 1.000000 1.00000000	_		18.55990	1.00000	2657.000			MS 5801	
FRONT 12.9230 0.98478 1.00000 RIGHT FRONT 13.2490 1.00000 FRONT 6.82810 0.88433	_		13.83780	1.00000	2644.000			MS 5801	
RIGHT FRONT 12.92510 1.00000 RIGHT FRONT 15.25490 1.00000 FRONT 6.82810 0.89453	FRONT		6.99560	0.99478	2612.000			HS5801	
RIGHT FRONT 15.25490 1.00000 FRONT 6.82810 0.89453	RIGHT		12.82510	1.00000	4 596,000			HS 5802	
FROWT 6. 62610 0. 89453	_		15.25490	1.00000	4565.000		•	FS3802	
	_		6.82810	0.89453	4456,000	٠		NS 5802	

TARGET RADAR HETRICS

global target prominence measured relative to target-free background

					ATS.	MIN		
		log metric	global target	range	northing	easting	test	elevation
target orientation	comment	value	prominence	(meters)	(meters)	(meters)	ឧ	setting
REAR		27.88460	1.00000	1481,000			MS 5803	-
REAR		3,43800	0.97334	1352,000			MS5803	-
4113 FRONT		6.58070	0.99109	1484.000			MS5803	<b></b>
LEFT SIDE		21.08460	1.00000	1376.000	•		MS5803	-
H113 FRONT		14.42230	0.99998	4570.000			HS 5804	
_		12.29460	0.88972	4456.000	•		HS5804	
HII3 LEFT SIDE	UNDER TREES	13,90430	1.00000	3878,000	79437,000	54153.000	MS6001	-
LEFT FROMI	UNDER TREES	19.97950	1.00000	3898.000	78480.000	54147.000	M\$6001	-
LEFT FRONT	UNDER TREES	13,45750	1.00000	3919.000	79570,000	54151.000	MS 6001	-
LEFT SIDE	BEHIND TREETOP	-6.38860	0.90658	4184.000	79273.000	53793.000	MS6002	0
H113 UNCHOM	BERIND TREETOP	-1.60610	0.97311	4138.000	78292.000	53845.000	MS6002	0
H113 UNGROWN	BEHIND TREETOP	-3.07280	0.85922	4170.000	78318.000	53818.000	MS6002	٥
RICHT SIDE	IN OPEN	12.64330	1.00000	3845.000	79466.000	54196.000	MS6002	0
RIGHT SIDE	BEHIND TREETOP	13.18960	1.00000	3852.000	79495.000	54197.000	MS6002	9
LEFT SIDE	IN OPEN	10.62820	0.99994	3843,000	78424.000	54185.000	MS6004	0
MII3 RIGHT FROMT	IN OPEN	20.04980	1.00000	3678.000	79437.000	54153.000	MS6004	0
M113 LEFT FRONT	UNDER TREES	4 . 85980	0.99854	3896.000	79490.000	54147.000	PS6004	0
RIGHT SIDE	IN OPEN	15.27830	1.00000	3919,000	79570.000	54151.000	HS 6004	0
FRONT	BEHIND TREETOP	16.97380	1.00000	4184.000		•	MS6101	•
RIGHT SIDE	BEHIND TREES	4.78690	0.88774	4169.000	79397.000	53839,000	MS6101	0
LEFT SIDE	IN OPEN	15.37230	1.00000	3843.000	78424.000	54185,000	MS6101	0
LEFT FROM	NEAR TREE	13.34360	1.00000	3898.000	19480.000	54147,000	MS6101	0
_		11.34250	0.88396	3919.000			MS6101	0
MIII LEFT FRONT	BEHIND TREETOP	4.84700	0.89720	4142.000	78372.000	53860.000	MS6102	-
FRONT	IN TREES	21.78440	1.00000	3898.000	78490.000	54147,000	MS6102	
LEFT SIDE		18.87450	1.00000	3919.000	,		MS6102	
LEFT FRONT		18.11810	1.00000	1969.000			HS63011	0
RIGHT FRONT	IN OPEN	16.50870	1.00000	1963.000	78576,000	55922.000	MS63011	0
LEFT FRONT	IN OPEN	21,70130	1.00000	1922.000	78598.000	55966,000	MS63011	0
LEFT FRONT	IN OPEN	19.44240	1.00000	1985.000	78620.000	55906,000	MS63011	0
FRONT	IN OPEN	10.42120	0.89963	3130.000	79143.000	54847.000	MS63012	٥
RIGHT SIDE	FRONT OF TREES	10,71630	0.98989	3090.000	79173.000	\$4896.000	MS63012	0
REAR	IN OPEN	8.82260	0.99941	3045,000	79175.000	54944,000	MS63012	0
LEFT SIDE	IN OPEN	13.94520	1.00000	3078.000	79208.000	54919.000	MS63012	0
LEFT SIDE	TOP SHOWING	16.82790	1.00000	1656,000	79038.000	56371,000	MS6403	0
RIGHT SIDE	TOP SHOWING	21.68010	1.00000	1590.000	79025.000	56438,000	MS6403	0
LEFT FRONT	TOP SHOWING	12.83340	1.00000	1510.000	78999.000	56514,000	MS6403	0
RIGHT FRONT	TOP SHOWING	3.71710	0.99451	1646.000	78070.000	56398,000	HS6403	0
RIGHT REAR	IN OPEN	10.28910	0.99989	1483.000	79013.000	56553.000	PSS 6403	0
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RICKT FRONT	TH OPEN	18 79430	1 00000	2510 810	29085 000	25475 000	HS 6603	¢

TARGET RADAR METRICS

globel target prominence measured relative to target-free background

target	orientation	comment	log metric value	Slobal target prominence	range (meters)	UTM northing (meters)	UTH essting (meters)	t. IO	elevation setting
9	#1000 #34 I	WITTE BRINGS	A 03300	0.97445	2494.040			MS6603	0
200	TENT FORT	THE CORP.	10.61260	0.98660	2490.270		55533.000	MS6603	۵
CT 15	DICHE FROM	RIAC RI	23.15820	3.0000	2333.730			MS6701	0
25.13	THOUS TOOTS	MIN OF THE	15.62080	26080	2380.870			MS6701	0
3 5	LEFT STOR	PART MERIND RILL	3.41410	0.98545	2414.820	78556,000		MS6701	۵

TARGET RADAR METRICS

global target prominence measured relative to target-free background

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target	orientation	coment	Log metric value	global target prominence	range (meters)	(meters)	(meters)		setting
						•			
8133	FRONT	IN OPEN	8.33520	0.99895	4204.000	75642.540	60686.090	MS5502	0
₩ 1	REAR	IN OPEN	0.15200	0.62512	4298.000	75544,870	60691.750	MS 5502	0
M60	RIGHT FRONT	IN OPEN	13.92810	0.98863	4166.000	75641.670	60568.220	MS 5502	0
M35	LEFT FRONT	IN OPEN	24.17860	1.00000	4120.000	75653,160	60451.570	MS 5502	٥
250	FROM	SHADED	13.71100	1.00000	1703.000	78488.700	57970.690	MS 5503	0
H35	FROMT	SHADED	8.62030	0.99977	1782.000	78474.130	57878.950	MS 5503	o
1460	HOVER		16.50530	1.00000	1738.000		٠	MS 5503	0
	REAR	SHADED	6.83510	0.88850	2335,242	77301.210	58849.070	MS5504	•
UBI	RIGHT SIDE	IN OPEN	12.31000	1.00000	2419.179	77218.320	58835,180	MS5504	0
DECOX	FRONT	IN OPEN	14.62850	1.00000	3170.000	77894.780	56585.940	MS 5601	•
135	RIGHT SIDE	IN OPEN	3.80470	0.87378	3015.000	78003,990	56700.860	MS 5601	٥
M113	RIGHT FRONT	IN OPEN	10.14620	0.99984	3791.000	75865.740	59926.980	MS 5602	-
CHI)	FRONT	IN OPEN	10.72910	0.99984	3950.000	75702.850	59919.850	MS 5602	<b>,</b> ,,,
M60	LEFT SIDE	IN OPEN	15.07620	1.00000	4080.000	75576.280	59950.970	MS 5602	-
X35	REAR	IN OPEN	9.25110	0.99945	3511.000	77928.700	56170.000	MS 5603	0
H35	FRONT	BERIND TREE	12.27530	0.99956	3550,000	77890.250	56146.420	MS 5603	0
nsz	LEFT SIDE	IN OPEN	12.71220	0.99967	3660.000	77877.480	56029,000	MS5603	0
Meo	RIGHT SIDE	IN OPEN	12.35210	0.99991	3041.000	76566,390	59496.020	MS5604	~
1460	RIGHT SIDE	IN OPEN	10.55370	0.99964	3065.000	76538,660	59440.020	MS 5604	-
AH1	LEFT REAR	IN OPEN	8.90000	0.99685	2925.000	76676.870	59414 . 860	MS 5604	-
M35	FRONT	SHADED	6.96280	0.99899	3214.000	78387.810	59421.170	MS 5604	~
M113	RIGHT SIDE	IN OPEN	9.08110	0.88911	3112.000	76488.520	59382.500	MS 5604	
H113	LEFT SIDE	BEHIND TREES	3.08840	0.92186	3163.000	76435.380	59334,490	MS 5604	7
. <del>16</del> 0	LEFT REAR		17.41400	1.00000	4456.000			MS5702	
M113	RIGHT FRONT		6.59480	0.99916	4570,000			MS5702	
Meo	LEFT FRONT		13.75840	0.89995	4456.000	٠		MS5702	-
M35	RIGHT FRONT		12.20550	0.99967	4574,000			HS5702	-
Meo	LEFT FRONT		8.00180	0.89904	3860,000			MS5703	0
M35	FRONT		13.32870	1.00000	3919.000	-		MS5703	0
DECOY	W/W		4.28780	0.98114	3808.000		٠	MS5703	0
HE0	RIGHT FROMT		16.97590	1.00000	3809,000			MS 5703	0
M113	RIGHT FROMT		4.92300	0.98920	3991.000			MS 5703	0
M60	RIGHT FRONT		4.43100	0.89229	2469.000			MS5704	a
H113	RIGHT FRONT		17.86160	1.00000	2349.000	•		MS 5704	0
M3S	LEFT FRONT		8.74440	1.00000	2213.000			MS5704	6
135	RIGHT FRONT		12.73180	0.98952	2657,000			MS 5801	
	LEFT FRONT		12.73180	0.99952	2644,000			MS 5801	-
M113	FROM		5.09540	0.97937	2612.000	•		HS 5801	-4
<b>103</b>	RIGHT FRONT		12.71400	1.00000	4596,000			MS 5802	-
H113	RIGHT FRONT		11.67990	1.00000	4565,000	•		HS 5802	~
DECOY	FRONT		5.95560	0.89872	4456.000	•		MS 5802	~
180	RIGHT FRONT		7.38650	1.00000	4574.000			MS 5802	1

TARGET RADAR METRICS

globel target prominence measured relative to target-free background

Parameter   10 m metric   10							HZ.	EL C		
NATIONAL   COMMONEY				log metric	global target	renge	northing	easting	test	elevation
NEAR   1.00000   1481.000   148	target	orientation	comment	value	prominence	(meters)	(meters)	(meters)	8	setting
TEAT SIDE   1.00000   1.		87.70		22.06770	1.00000	1481.000			MS5803	
LETY SIDE		2770		3 88670	0.95721	1352.000	٠		HS5803	٦
PROPRESSED   1989   1		Tarres.		13.84620	0.99972	1484.000			MS 5803	-
NICHEL SIDE   WINDER TREES   1.71200   1.00000   3475.000   54151.000   54151.000   1.00000   3456.000   54151.000   54151.000   1.00000   3456.000   3457.000   34	3 .	I were early		15 80380	1.00000	1376,000			MS5803	
LETT FRONT   UNDER TREES   10,4707   1,00000   3888, 000   2443, 000   2413,	<b>.</b> :	MEET SIDE		4 71200	0.000.0	4570.000	•		MS5804	-
LETT FIGHT   UNDER THEES   10.470   1.00000   3678.000   78497.000   54137.000   1.00000   1.00000   1.00000   1.00000   24137.000   24137.000   1.000000   1.00000   24137.	3 .	Deman		70030	0 93728	4456.000	•	. ,	MS 5804	-
LEFT FROMT   UNIOR TREETO   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.0000   1.0000   1.	. :	KIGH SIDE	STAGE CHARLE	10 47070	1 00000	3878.000	78437,000	54153,000	MS6001	-
LETY SIDE   MARIND TREETOR   2,5220   0,99343   4146,000   79270,000   54151,000   4186,000   79270,000   73783,	3.	THE TOTAL	INDER TREES	12 30030	1.00000	3898.000	78490.000	54147.000	MS6001	-
International National Property   3.92220   0.97545   4184.000   79223 0.00   53793.000   18700   18		THOSE THOSE	INDEA TREES	9,00510	0.99972	3919.000	79570.000	54151.000	MS 6001	
UNICOME   NUMERING PRESENT   2.58270   0.82606   4138.000   79212.000   5348.000   79212.000   5328.000   5328.000   79212.000   5328.000   5328.000   79212.000	٠	LEFT STOR	RESIND TREETOP	3.92220	0.97545	4184,000	79273,000	53793.000	MS 5002	0
NIGHT SIDE   IN OPEN   S. 538-50   0.93194   4170.000   79318.000   54381.000   PAGES   100   PAGE	. :	INCREME	RENTHD TREETOP	2 59270	0.92606	4138.000	79292.000	53845.000	MS6002	0
N. CORT. S.DE	3 6		RESIND TREETOP	2.69880	0.93184	4170.000	79319.000	53818.000	MS6002	٥
RIGHT SIDE   REMIND TREETOP   5.19410   0.99238   3842.000   79424.000   54137.000   74424.000   744		Prost Sing	1 OPER	5.34520	0.89200	3845.000	79466.000	54196.000	MS6002	0
LEFT SIDE	, v	RIGHT SIDE	NEHIND TREETOP	5.19410	0.99131	3852.000	79495.000	54197.000	MS6002	0
NIGHT FRONT		LEFT SIDE	IN OPEN	5, 14880	0.99528	3843.000	79424,000	54185.000	MS6004	0
IEFT FROWT   UNDER TREES   5.28640   0.99466   3565.000   79490.000   54147.000   FROWT   LIEPT FROWT   UNDER TREES   15.6150   1.00000   3919.000   79570.000   54151.000   FROWT   LETT SIDE   LETT SIDE   LETT SIDE   LETT FROWT   LETT FR	13	RIGHT FRONT	IN OPEN	16,20030	1.00000	3878.000	78437.000	54153.000	MS6004	o
FIGHT SIDE   IN OPEN   12.44160   1.00000   3919.000   79570.000   54151.000   1.0000   1.00000   1.00000   1.0000   1.00000   1.00000   1.0000   1.00000   1.00000   1.00000   1.00000   1.0000   1.00000   1.0000   1.00000   1.0000   1.0000   1.0000   1.0000		LEFT FROMT	UNDER TREES	5.28640	0.99486	3898.000	79490,000	54147.000	MS5004	0
FRONT   REHIND TREETOP   12.88690   0.89891   4184.000   4182.000   53839.000   4182.0		RIGHT SIDE	IN OPEN	15.46180	1.00000	3919.000	79570.000	54151.000	MS6004	0
LETT SIDE	, en	FROM	BEHIND TREETOP	12,89890	0.99991	4184.000	-	٠	MS6101	0
LETT SIDE	· •	RIGHT SIDE	BEKIND TREES	5.41190	0.99330	4169.000	79397,000	53839.000	MS6101	0
LEFT FRONT   NEAR TREE   10.670.20   0.68664   3866.000   79480.000   54147.000   78125.200   7425.000   7442.000   79125.20		LEFT SIDE	IN OPEN	6.18970	0.99678	3843,000	79424.000	54185.000	MS6101	0
RIGHT SIDE         14,41360         1,00000         3918.000         79480.000         79480.000         79480.000         79480.000         79480.000         79480.000         79480.000         79490.000         7	=	LEFT FROM	HEAR TREE	10.67020	0.99964	3896.000	78480,000	54147.000	MS6101	0
LEFT FRONT		RIGHT SIDE		14,41360	1.00000	3919.000		•	MS6101	0
FRORT         IM TREES         18,79540         1,00000         3888.000         79490.000         54147.000           LEFT FRONT         IM OPEN         22,20340         1,00000         1659.000         7659.000         55922.000           RIGHT FRONT         IM OPEN         15,5830         0,98984         1922.000         7658.000         5596.000           LEFT FRONT         IM OPEN         15,5830         0,98984         1922.000         7658.000         5596.000           RIGHT SIDE         FRONT OF TREES         1,0000         1,989.00         7843.00         5596.00         5596.00           RIGHT SIDE         FRONT OF TREES         1,0000         0,989.0         3130.00         79143.00         5494.00           RIGHT SIDE         IM OPEN         3,000         0,980.0         3045.00         79143.00         5494.00           RIGHT SIDE         IM OPEN         1,000         1,000         3015.00         7915.00         5494.00           RIGHT FRONT         TOP SHOWING         24,3540         1,000         3015.00         5494.00         5494.00           RIGHT FRONT         TOP SHOWING         24,3540         1,000         1500         7902.00         5531.00           RIGHT FRONT <t< td=""><td>13</td><td>LEFT FROM</td><td>BEHIND INCETOR</td><td>4.65460</td><td>0.98732</td><td>4142.000</td><td>78372.000</td><td>53860.000</td><td>MS6102</td><td>-</td></t<>	13	LEFT FROM	BEHIND INCETOR	4.65460	0.98732	4142.000	78372.000	53860.000	MS6102	-
LEFT SIDE	2	FRONT	IN TREES	18.79540	1.00000	3888,000	79490,000	54147.000	MS6102	-
LETT FRONT	=	LEFT SIDE		10,61630	0.88981	3919.000		•	MS6102	-
RIGHT FRONT IN OPEN   17.50210   1.00000   1963.000   76576.000   55922.000   1.000000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.00000   1.000000000   1.0000000000		LEFT FROMI		22.20340	1.00000	1969.000			MS63011	0
LETT FRONT IN OPEN   15.5836   0.9994   1922.000   76586.000   55866.000   187   1		RIGHT FRONT	IN OPEN	17.50210	1.00000	1963.000	78575.000	55922.000	MS63011	0
FRONT IN OPEN   1		LEFT FROMT	IN OPEN	15,58390	98888	1922.000	78598.000	55966,000	HS63011	0
FRONT         IN OPEN         9.35630         0.99619         3130.000         79143.000         54847.000         66847.000         64847.000         66847.000         66847.000         64847.000		LEFT FROMT	IN OPEN	27.20000	1.00000	1985.000	78520.000	55906.000	MS63011	0
RIGHT SIDE         FRONT OF TREES         10.86880         0.98940         3090.000         79173.000         54696.000           REAR         IN OPEN         5.08930         0.98040         3045.000         79173.000         5944.000           LEFT SIDE         IN OPEN         16.98360         1.00000         3075.000         79173.000         5944.000           RIGHT SIDE         IN OPEN         28.79160         1.00000         1550.000         79028.000         54913.000           RIGHT FRONT         IOP SHOWING         24.35240         1.00000         1590.000         79028.000         55514.000           RIGHT FRONT         IOP SHOWING         24.35240         1.00000         1590.000         78029.000         55514.000           RIGHT FRONT         IOP SHOWING         10.23360         0.98860         1546.000         790170.000         55514.000           RIGHT FRONT         IN OPEN         12.3307         0.98861         2510.810         79013.000         55535.000           REAR         IN OPEN         18.66840         1.00000         2353.700         7805.000         55475.000	. =	FRONT	Mado MI	9.35630	0.99619	3130.000	79143.000	54847.000	HS63012	0
LET SIDE	, :	PICAT STOR		10.68880	0.99940	3090.000	79173.000	54696.000	MS63012	٥
LEFT SIDE         IN OPEN         16.99580         1.00000         3078.000         79208.000         54918.000           LEFT SIDE         TOP SHOWING         28.4340         1.00000         1550.000         79208.000         54918.000           RIGHT FRONT         TOP SHOWING         24.55240         1.00000         1550.000         79020.000         56318.000           RIGHT FRONT         TOP SHOWING         10.23360         0.99880         1646.000         79070.000         55386.000           RIGHT FRONT         IN OPEN         12.63070         0.99880         1646.000         79070.000         55386.000           RIGHT FRONT         IN OPEN         15.4860         0.99880         1645.000         79070.000         55386.000           REAR         IN OPEN         18.66840         1.00000         2335.00         78475.000         55475.000	١ ـ	REAR		5.08930	0.98040	3045.000	79175.000	54944.000	MS63012	0
LETT SIDE TOP SHOWING 28.79160 1.00000 1556.000 79038.000 55371.000  RIGHT SIDE TOP SHOWING 28.43410 1.00000 1590.000 79028.000 56438.000  LETT FRONT TOP SHOWING 24.55240 1.00000 1510.000 79025.000 56438.000  RIGHT REAR IN OPEN 12.8360 0.99880 166.000 79070.000 56534.000  RIGHT REAR IN OPEN 15.83070 0.99834 1463.000 79070.000 56553.000  REAR THOUSEN 18 OPEN 18.66840 1.00000 2355.700 79127.000 55462.000	. 5	LEFT STOR	TR OPEN	16.99580	1.00000	3078.000	79208.000	54919.000	MS63012	0
RIGHT SIDE         TOP SHOWING         28.43410         1.00000         1590.000         79025.000         56436.000           LEFT FRONT         TOP SHOWING         24.55240         1.00000         1510.000         78999.000         56514.000           RIGHT FRONT         TOP SHOWING         10.23360         0.99860         166.000         78970.000         56386.000           RIGHT FRONT         IN OPEN         12.83070         0.9881         2143.000         79013.000         5553.000           RIGHT FRONT         IN OPEN         15.24960         0.99881         2510.810         79085.000         55452.000           REAR         IN OPEN         18.66840         1,0000         2353.700         7922.000         55422.000	۱.	Tre STDE	TOP SHOWING	28.79180	1.00000	1656.000	79038,000	56371.000	MS6403	0
LEFT FRONT TOP SHOWING 24.55240 1.00000 1510.000 78999.000 56514.000 RIGHT FRONT TOP SHOWING 10.23360 0.89880 1646.000 79070.000 56518.000 RIGHT FRONT IN OPEN 12.80070 0.98881 2510.810 79013.000 56553.000 REAF TRONT IN OPEN 18.46840 0.98881 2510.810 79025.000 55475.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 55462.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 55462.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 55462.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 55462.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 55462.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 55462.000 REAF TRONT IN OPEN 18.46840 1.00000 2535.700 79025.000 FEATURE TRONT IN OPEN 18.46840 1.00000 79025.000 FEATURE TRONT IN OPEN 18.4684		BIGHT SIDE	TOP SHOWTHG	28.43410	1.00000	1590,000	79025,000	56438.000	HS6403	0
RIGHT FRONT         TOP SHOWING         10.23360         0.99880         1646.000         79070.000         56382.000           RIGHT FRONT         IN OPEN         12.63070         0.99834         1463.000         79013.000         56533.000           RIGHT FRONT         IN OPEN         15.43840         0.99861         2.510.810         79043.000         56553.000           REAR         IN OPEN         18.66840         1.00000         2335.700         79127.000         55462.000	. =	THEFT FROME	TOP SHOWING	24.55240	1.00000	1510.000	78999.000	56514.000	MS6403	0
RIGHT REAR IN OPEN 12.83070 0.98934 1483.000 79013.000 55553.000 RIGHT FRONT IN OPEN 15.24860 0.99881 2510.810 78085.000 55475.000 REAR IN OPEN 18.86840 1.00000 2555.700 79127.000 55462.000 1	177	RIGHT FROM	TOP SHOWING	10.23360	0.99880	1646.000	79070,000	56398.000	MS6403	0
RICHT FRONT IN OPEN 15.2486 0.99881 2510.810 78085.000 55475.000 8 REAR IN OPEN 18.86840 1.00000 2535.700 79127.000 55462.000 1		RIGHT REAR	IN OPEN	12.63070	0.99934	1483.000	79013,000	56553.000	MS6403	0
NEAR IN OPEN 18.66840 1.00000 2535.700 79127.000 55462.000 1		RIGHT FRONT	IN OPEN	15.24980	0.99981	2510.810	78085,000	55475,000	MS6603	0
	=	DEAD	TH OPEN	18.86840	1.00000	2535,700	79127.000	55462.000	<b>FS6603</b>	•

TARGET RADAR METRICS

global target prominence measured relative to target-free background

		continued)	AMU-polezies.	on as relaterate (continued)	ianto ea taul		1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	
target	orientation	comment	log metric velue	global target prominence	range (meters)	UTM northing (meters)	UTM easting (meters)	test ID	elevation satting
096	LEFT FRONT	WITH BRUSH	6.51150	0.98855	2494.040			MS6603	0
H113	LEFT FROMT	IN OPEN	5.00690	0.87216	2490.270			MS6603	0
H113	RIGHT FRONT	IN OPEN	11.83580	0.99970	2333,730			MS6701	0
nsz	REAR	IN OPEN	6.78510	0.98826	2380.870	78504.000		MS6701	0
H35	LEFT SIDE	PART BERIND HILL	3.97020	0.94528	2414.820		55466.000	MS6701	0

TARGET RADAR METRICS

global target prominence measured relative to target-free background

..... BAND-polaritation RR METRIC-variance

elevation setting	0 0	0 200	10.2 0	102 0	0 00	0 601	0 0	0 00	0 40	0 0	501 0	102 1	102	102	0 609	0 000	0 000	1 100	104	104 1	104	104	304	102 1	102	102 1	102	703	0 0	03 0	0 00	03 0	0 0	0 40,	0 40	101 1	101 1	101	102	302 1		7
UTM easting test (meters) ID	60686,090 MS5502	-	60568.220 MS5502	60451.570 MSS502	57970,690 MS5503	57878.950 MS5503	, MS\$503	58849.070 MS5504	_	56585.940 MS5601	\$6700.PE0 MS5601	_	_	_	_	_	_	_	_	_	_		59334, 490 MS5604	. MS5702	. MS5702	. MS5702	MS5702	. MS5703	. MS5703	. MS5703	. MS5703	. MS5703	. MS5704	. MS5704	. MS5704	. MS5801	. MS5801	. HS5801	MS5802	HS 5802	STATE SECOND	, .
UTM • northing ) (meters)	0 75642.540	_	_	0 75653.160	0 78488,700	0 78474.130		2 77301.210	^	^	0 78003.890		^	^	_	_	_	_	_	^	_	_	0 76435.380																			
set range e (meters)	8 4204_600	•	•	4120.000	1703.000	1782.000	_	~	•		3015.000	••	Z 3950.000	000.080, 000	••	.,	••	••			•	.,	177	•	•	•	•	.,		.,		•••	.4	••	.,	0 2657.000	3 2644,000	7 2612.000	-	*	•	•
ic global target prominence	0 .99458				1.00000	•		_	-	_	0 0.79775	0 0.99653	0 0.98642		_		_	_	_		_	_	-		•	-	_	•				_	0.67105		1.0000	1.00000	0.99833	0.91987				
log metric value	-2.16820	3.95970	-3.29390	15.61200	5.63660	-3.15400	5, 80890	0.25170	0.20400	0.65220	-7.83920	-2.2000	-2.26580	3.70860	0.79950	-3.44350	1.56100	-0.22410	-0.63580	-6.71570	2.66240	-0.81140	•	4.12030	-2.78330	3.45550	0.53550	-3.30720	5.50380	-6.92400	4.53200	-3.55510	-11.58660	9.03750	1.00480	6.66010	-0.98570	-6.17680	1,12300	1.15720	SEGGG A.	2584E-01
comment	N OPEN	IN OPEN	IN OPEN	IN OPEN	SHADED	SHADED		SHADED	IN OPEN	IN OPEN	IN OPEN	IN OPEN	IN OPEN	IN OPEN	IN OPEN	BEHIND TREE	IN OPEN	IN OPEN	IN OPEN	IN OPEN	SHADED	IN OPEN	BEHIND TREES																			
c exientation	FRONT	REAR	RIGHT FRONT	LEFT FROMT	FRONT	FRONT	MOVER	REAR	RIGHT SIDE	FRONT	RIGHT SIDE	RIGHT FRONT	FRONT	LEFT SIDE	REAR	FRONT	LEFT SIDE	RICHT SIDE	RIGHT SIDE	LEFT REAR	FRORT	RIGHT SIDE	LEFT SIDE	LEFT REAR	RIGHT FROMT	LEFT FROM	RIGHT FROM	LEFT FROMT	FRONT	N/A	RIGHT FROM	RIGHT FRONT	RIGHT FROMT	RIGHT FRONT	LEFT FRONT	RIGHT FRONT	LEFT FROMT	FROMI	RIGHT FROM	RIGHT FROME	Ferner	
t args of	M 13	9	M60	H35	ZSU	M35	MESO	1	CHI	DECOY	<b>73</b> 5	H113	UH1	1460	M35	M35	nsz	₩ <b>2</b> 0	M60	AH1	M35	H113	M113	M60	M113	360	M35	1460	H35	DECOY	M60	M113	160	M113	H35	X 23 %	W60	M113	#35	H	2000	1127311

TARGET RADAR METRICS

global target prominence measured relative to target-free background

...... BANDwpolatization RR METRIC-variance ....... (continued)

Part							ļ	į		
NEAR   PROMIT   COMMENT   Value   Promitience   (materia)   (mat				log metric		range	UIM	UTH	test	elevation
PROOF	target		comment	value		(meters)	(meters)	(meters)	9	setting
FIGHT   FORT	ZSU	REAR		12.77130	1.00000	1481.000	٠		MS5803	п
LEFT SIDE	980	REAR		-6.90900	0.80014	1352.000		•	MS5803	1
LEFT SIDE	M113	FRONT		-6.59480	0.90600	1484.000			MS 5803	
RIGHT SIDE	160	LEFT SIDE		8.07100	1,00000	1376.000		•	MS 5803	-4
LEFT SIDE	4113	FRONT		0.44200	0.89864	4570,000			MS5804	-1
LETT RIGHT   MUDER TRREES   1.000600   3978,000   79437,000   74137,000   14	09	RIGHT SIDE		0.39520	0.99864	4456,000	•		MS 5804	~4
LETT FRONT         UNDER TREES         3.7372         1.00000         3888.000         78490.000         54137.000           LETT FRONT         UNDER TREES         1.20230         0.20320         0.74802         4184.000         78273.000         54137.000           UNKHOWN         BERHIND TREETOP         -17.3409         0.88364         4136.000         78273.000         3384.000           RIGHT SIDE         IN OPEN         -0.58070         0.89864         385.000         74922.000         3418.000           RIGHT SIDE         IN OPEN         -0.58070         0.98864         385.000         7493.000         3418.000           RIGHT SIDE         IN OPEN         -0.58070         1.00000         3843.000         7493.000         3418.00           RIGHT SIDE         IN OPEN         -0.58070         1.00000         3843.000         7417.000         7417.000           RIGHT SIDE         IN OPEN         -1.0830         1.00000         3843.000         7417.000         7417.000           RIGHT SIDE         IN OPEN         -1.08790         1.00000         3843.000         7417.000         7417.000           RIGHT SIDE         IN OPEN         -1.08790         1.00000         3843.000         7417.000         7417.000 <th>113</th> <td>LEFT SIDE</td> <th>UNDER TREES</th> <td>1.00680</td> <td>1.00000</td> <td>3678.000</td> <td>79437.000</td> <td>54153.000</td> <td>MS6001</td> <td></td>	113	LEFT SIDE	UNDER TREES	1.00680	1.00000	3678.000	79437.000	54153.000	MS6001	
LEFT SIDE         BERRIND TREETS         0.20230         0.58849         3919,000         79570,000         54151,000           LEFT SIDE         BERRIND TREETOP         -13,13560         0.78846         4138,000         79273,000         5395,000           UNCHOAN         BERRIND TREETOP         -13,13060         0.8346         4138,000         79218,000         5415,000           RIGHT SIDE         BRRIND TREETOP         -0.7470         1,0000         3843,000         7918,000         5418,000           RIGHT SIDE         IN OPEN         -0.77280         1,0000         3843,000         79426,000         5418,000           RIGHT SIDE         IN OPEN         -0.77280         1,0000         3843,000         79470,000         54137,000           RIGHT SIDE         IN OPEN         -7.3860         1,0000         3843,000         79470,000         54137,000           RIGHT SIDE         IN OPEN         -7.3860         1,0000         3843,000         79470,000         54137,000           RIGHT SIDE         IN OPEN         -7.3860         1,0000         3843,000         7940,000         54137,000           LEFT FRONT         IN PEN         -7.3860         1,0000         3843,000         74417,000           LEFT FRONT <th>35</th> <td>LEFT FRONT</td> <th>UNDER TREES</th> <td>5.72720</td> <td>1.00000</td> <td>3888.000</td> <td>79490.000</td> <td>54147.000</td> <td>MS6001</td> <td>-</td>	35	LEFT FRONT	UNDER TREES	5.72720	1.00000	3888.000	79490.000	54147.000	MS6001	-
UNIXON   BERIND TREETOP   -17,2352   0.14802   4138,000   79223.000   53945.000   100000000000000000000000000000000	35	LEFT FRONT	UNDER TREES	0.20230	0.89949	3919,000	79570,000	54151.000	MS6001	-
UNIXIONA         BERIND TREETOR         -13.14680         0.83564         4178.000         79222.00         53445.000           RIGHT SIDE         IN OPERA         -15.30860         0.83172         4170.000         79465.000         54486.000           RIGHT SIDE         IN OPERA         -0.68070         0.89964         3345.000         79485.000         54187.000           RIGHT SIDE         IN OPERA         -0.7830         1.00000         3343.000         79485.000         54187.000           RIGHT SIDE         IN OPERA         -0.7830         1.00000         3343.000         79495.000         54187.000           RIGHT SIDE         IN OPERA         -1.04530         0.98295         3898.000         79470.000         54187.000           FROHT         SIDE         IN OPERA         -7.38440         0.98180.000         79470.000         5417.000           RIGHT SIDE         BERIND TREETOR         -7.38440         0.98978         0.000         7942.000         54187.000           LEFT SIDE         IN OPERA         -7.38440         0.98978         0.98978.000         79490.000         54147.000           LEFT SIDE         IN OPERA         -7.38440         0.98978         4.180.000         7944.000         7944.000      <	H1	LEFT SIDE	BEHIND TREETOP	-17,23520	0.74802	4184.000	78273.000	53793.000	MS6002	0
UNICIONA         BEHIND TREETOP         -15,33060         0,63172         4170,000         79418 000         54185 000         <	113	UNICHOWN	BEHIND TREETOP	-13.14680	0.88364	4138,000	79292.000	53845.000	MS6002	0
NICHT SIDE	113	UNICHONIN	BEHIND TREETOP	-15,33080	0.83172	4170.000	79319.000	53618.000	MS 6002	0
NEATH SIDE   BEHIND TREETOP   -0.68070   0.89864   3852.000   79435.000   54185.000   1.00000   38437.000   3443	35	RIGHT SIDE	IN OPEN	0.74470	1.00000	3845,000	79466.000	54196.000	MS 6002	0
LEFT SIDE         IN OPEN         -0.7720         1.00000         3843.000         79424.000         54185.000           RIGHT SIDE         IN OPEN         4.56570         1.00000         3843.000         78437.000         5413.000           RIGHT SIDE         IN OPEN         4.56670         1.00000         3818.000         78437.000         5413.000           RIGHT SIDE         IN OPEN         4.38600         1.00000         4184.000         78437.000         5413.000           RIGHT SIDE         IN OPEN         2.63760         1.00000         3818.000         79424.000         54147.000           LEFT SIDE         IN OPEN         2.6376         1.00000         3918.000         79424.000         54147.000           LEFT SIDE         IN OPEN         2.6376         1.00000         3918.000         79430.000         54147.000           LEFT SIDE         IN TREES         6.51760         1.00000         3918.000         7940.000         54147.000           LEFT SIDE         IN OPEN         4.18390         1.00000         3918.000         7940.000         54147.000           LEFT SIDE         IN OPEN         3.56110         1.00000         3920.000         7447.000         7447.000           LEFT SIDE	35	RIGHT SIDE	BEHIND TREETOP	-0.69070	99886	3852.000	79495.000	54197,000	MS6002	0
RIGHT FRONT         IN OPEN         4,56670         1,00000         3978.000         78437.000         54153.000           RIGHT SIDE         IN OPEN         1,38900         1,00000         3888.000         79440.000         54157.000           FRONT         IN OPEN         1,38900         1,00000         4184.000         79570.000         5415.000           FRONT         IN OPEN         2,3840         0,98130         4,186         0,98130         0,7570.00         5415.000           LEFT SIDE         IN OPEN         2,3840         0,98130         4,186         0,98130         0,000         5418.000	8	LEFT SIDE	IN OPEN	-0.77280	1.00000	3843.000	79424,000	54185.000	MS6004	0
LEFT FRONT   UNDER TREES   -7.04530   0.98295   3898.000   79490.000   54147.000   78070   7	113	RIGHT FRONT	IN OPEN	4,56670	1.00000	3878.000	78437.000	54153,000	MS6004	٥
FROMT SIDE	113	LEFT FRONT	UNDER TREES	-7.04530	0.99295	3698.000	79490.000	54147,000	MS6004	0
FRONT   BEHIND TREETO	55	RIGHT SIDE	IN OPEN	1,38900	1.00000	3918,000	78570,000	54151.000	MS6004	•
NICHT SIDE   BEHIND TREES	ž.	FRONT	BEHIND TREETOP	4.38660	1.00000	4184,000			MS6101	0
LEFT SIDE	5	RIGHT SIDE	BEHIND TREES	-7.36440	0.98130	4169.000	78397,000	53839,000	MS6101	•
LEFT FRONT   NEAR TREE	2	LEFT SIDE	IN OPEN	2.63760	1.00000	3843,000	79424.000	54185,000	MS6101	0
Name	S	LEFT FRONT	NEAR TREE	-1.06790	0.88978	3898.000	79490.000	54147.000	MS6101	0
LEFT FRONT   BEHIND TREETOP   6.32570   0.98326   4142.000   23860.000   23860.000   23860.000   23860.000   23860.000   24147.000   241	8	RIGHT SIDE		-0.06790	1.00000	3919,000			MS6101	0
FRONT         IN TREES         6.51780         1.00000         3888.000         79490.000         54147.000           LEFT REAT         4.18390         1.00000         3818.000         79490.00         5417.000           RIGHT FRONT         IN OPEN         2.95300         1.00000         1863.000         7856.000         5596.000           LEFT FRONT         IN OPEN         7.96110         1.00000         1822.000         7856.000         5596.000           FRONT         IN OPEN         -0.78540         1.00000         1982.000         78596.000         55966.000           RIGHT SIDE         FRONT OF TREES         0.35670         1.00000         1982.000         7813.000         54944.000           RIGHT SIDE         IN OPEN         -5.09620         0.97457         3045.000         7913.000         54944.000           REAR         IN OPEN         -5.09620         0.97457         3045.000         7913.000         54944.000           RIGHT SIDE         IN OPEN         -5.09620         1.00000         1950.000         7913.000         54944.000           RIGHT FRONT         TOP SHOWING         2.69540         1.00000         1950.000         54944.000           RIGHT FRONT         TOP SHOWING         2.6954	113	LEFT FRONT	BEHIND TREETOP	-6.32570	0.98326	4142.000	79372.000	53860.000	MS6102	-
LEFT SIDE         4.1830         1.00000         3918 000           LEFT FRONT         1.00000         1969 000         1.00000         1869 000           RICHT FRONT         IN OPEN         2.50870         1.00000         1863 000         7.857 00         5822 000           LEFT FRONT         IN OPEN         -0.78540         0.98970         3130 000         25892 000         55966 000           ROST         IN OPEN         -0.78540         0.98970         3130 000         25482 000         55966 000           ROST         IN OPEN         -0.78540         0.98970         3130 000         25482 000         55966 000           ROST         IN OPEN         -0.78540         0.98970         3130 000         2443 000         55966 000           REAR         IN OPEN         -2.68640         1.0000         3076 00         79173 000         54918 000           RIGHT SIDE         IN OPEN         2.68540         1.0000         3076 00         79026 00         54918 000           RIGHT FRONT         TOP SHOWING         2.9000         1.0000         7902 00         54918 000           RIGHT FRONT         TOP SHOWING         2.9000         1.0000         7902 00         5643 000           RIGHT FRONT<	13	FRONT	IN TREES	6,51760	1.00000	3888.000	79490.000	54147.000	MS6102	<b></b>
LEFT FRONT	<b>.</b>	LEFT SIDE		4.18390	1.00000	3919.000		٠	HS6102	-1
RIGHT FRONT IN OPEN   3.95380   1.00000   1963.000   55952.000   1963.000   1963.000   55922.000   1963.000   1963.000   55922.000   1963.000   1963.000   55962.000   1267   100000   1963.000   19	0	LEFT FRONT		5,70870	1.00000	1969,000		٠	MS63011	0
LEFT FRONT IN OPEN	0	RIGHT FRONT	IN OPEN	3.95380	1.00000	1953.000	78576,000	55922,000	MS63011	0
LEFT FRONT IN OPEN   6.072 0 1.00000 1985.000 76620.000 55906.000	9	LEFT FRONT	IN OPEN	7.96110	1.00000	1922.000	78598.000	55966,000	MS63011	0
FRONT         IN OPER         -0.78550         0.98970         3130.000         79143.000         54847.000           RIGHS SIDE         FRONT OF TREES         0.5850         1.0000         3980.000         79173.000         54847.000           REAR         IN OPEN         -5.88640         1.0000         3076.000         79173.000         54944.000           LEFT SIDE         IN OPEN         2.68640         1.0000         3078.000         79173.000         54944.000           RIGHT SIDE         IN OPEN         2.68540         1.0000         156.000         7928.000         54944.000           RIGHT FRONT         TOP SHOWING         8.10820         1.00000         156.000         7928.000         56371.000           RIGHT FRONT         TOP SHOWING         -6.72610         0.97700         1646.000         79070.000         56319.000           RIGHT FRONT         TOP SHOWING         -6.52610         0.97700         1465.000         79070.000         56319.000         RAPAR           RIGHT FRONT         IN OPEN         6.40390         0.99989         1465.000         79070.000         56353.000         RAPAR           REAR         IN OPEN         0.90396         1463.000         79127.000         55457.000 <th>9</th> <td>LEFT FRONT</td> <th>IN OPEN</th> <td>6.072 0</td> <td>1.00000</td> <td>1985.000</td> <td>78620,000</td> <td>55906.000</td> <td>MS63011</td> <td>0</td>	9	LEFT FRONT	IN OPEN	6.072 0	1.00000	1985.000	78620,000	55906.000	MS63011	0
RIGHT SIDE         FRONT OF TREES         0.356:0         1.00000         3090.000         79173.000         54896.000         PS 44.000         PS 44.000         PS 44.000         PS 494.000	5	FRONT	IN OPEN	-0.78550	0.99870	3130,000	79143,000	54847,000	MS63012	Đ
REAR         IN OPEN         -5.08620         0.97457         3045.000         79175.000         54944.000         P. 68640         1.00000         3075.000         79175.000         54944.000         P. 6818.000         P. 6818.000         P. 6818.000         P. 6818.000         P. 6818.000         P. 6818.000         P. 6819.000         54918.000         P. 6819.000         P. 68	113	RIGHT SIDE	FRONT OF TREES	0.35630	1.00000	3090.000	79173,000	54896.000	MS63012	0
LEFT SIDE IN OPEN 2.68640 1.00000 3078.000 79209.000 54919.000 14F1 SIDE TOP SHOWING 5.68550 1.00000 1565.000 7738.000 56439.000 14F1 SIDE TOP SHOWING 2.68550 1.00000 1565.000 7708.000 56439.000 14F1 FRONT TOP SHOWING 2.67030 1.00000 1310.000 79025.000 56439.000 14F1 FRONT TOP SHOWING 6.52610 0.97700 1546.000 79070.000 55399.000 17 10 10 10 10 10 10 10 10 10 10 10 10 10	=	REAR	IN OPER	-5.09620	0.97457	3045.000	79175.000	54944,000	MS63012	0
LEFT SIDE TOP SHOWING 5.69550 1.00000 1656.000 7.738.000 56371.000 187.038.100 1700 18.000 18	113	LEFT SIDE	IN OPEN	2.68640	1.00000	3076.000	79208.000	54919.000	MS63012	0
RIGHT SIDE         TOP SHOWING         8.10620         1.00000         1590.000         79025.000         56436.000         P.0000         LEFT FRONT         TOP SHOWING         2.0703         1.0000         1510.000         78996.000         56514.000         P.0000         2514.000         P.0000         25514.000         P.0000         26514.000         P.0000	2	LEFT SIDE	TOP SHOWING	5.69550	1.00000	1656.000	7-038.000	56371.000	MS6403	0
LEFT FRONT TOP SHOWING 2.07030 1.00000 1510.000 78999.000 56514.000 N RIGHT FRONT TOP SHOWING -6.52816 0.97700 1646.000 79070.000 565396.000 N RIGHT FRANT IN OPEN 6.480300 0.99988 1443.000 79013.000 56533.000 N RAM IN OPEN 7.08700 799998 2510.810 79085.000 55475.000 N RAM IN OPEN 7.08700 7909998 7500 79072.000 554675.000 N RAM IN OPEN 7.08700 7909998 7500 79072.000 554675.000 N RAM IN OPEN 7.08700 79072.000 554675.000 79072.000 554675.000 79072.000 790	9	RIGHT SIDE	TOP SHOWING	8,10820	1.00000	1580.000	79025.000	56438,000	MS6403	0
RIGHT FRONT         TOP SHOWING         -6.52610         0.97700         1646.000         79070.000         56398.000         N           RIGHT FRONT         IN OPEN         -0.61030         0.99989         1443.000         79013.000         56553.000           RIGHT FRONT         IN OPEN         6.43300         0.99986         2310.010         79083.000         55475.000           REAR         IN OPEN         7.46330         1.00000         2235.700         79127.000         554627.000	22	LEFT FRONT		2.97030	1.00000	1510.000	78999,000	56514.000	MS6403	0
RICHT REAR IN OPEN -0.61050 0.99989 1483.000 79013.000 56553.000 RICHT REAR IN OPEN 6.48300 0.99986 2510.010 79085.000 55475.000 REAR IN OPEN 7.88330 1.00000 2535.700 79127.000 55462.000 REAR	113	RIGHT FRONT	TOP SHOWING	-6,52610	0.87700	1646.000	79070,000	56398,000	MS6403	0
RIGHT FROWT IN OPEN 6.40300 0.00096 2510.810 79085.000 55475.000 PREAK IN OPEN 7.80330 1.00000 2535.700 79127.000 55462.000 P	=	RIGHT REAR	IN OPEN	-0.61050	0.99989	1483.000	79013.000	56553.000	HS6403	0
REAR IN OPEN 7.86330 1.00000 2535.700 79127.000 55462.000 F	8	RIGHT FRONT	IN OPEN	6.49300	0.99996	2510.810	79085,000	55475,000	MS6603	0
	: E	REAR	IN OPEN	7,88330	1.0000	2535.700	79127,000	55462,000	HS5603	۰

TARGET RADAR METRICS

global target prominence measured relative to target-free background

; ; ; ; ;	, d = f = 6 + 7 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8	RANO-polatication RR PETRIC=Variance (continued)	RAKO-poler	teation RR METRI (continued)	Cevariance	RELA	Æ		
tersot	orientation	comment	log metric value	global target prominence	range (meters)	(meters)	(meters)	1 G	setting
¥		WITH BRUSH	2.10410		2494.040		55519.000	MS6603	o
100		12002	-1.15120	0.93552	2480.270		55533,000	MS6603	٥
N S	BICHT FOOM	THE CHARLE	7.66980	1.00000	2333,730	78471.000	55541,000 MS6701	MS6701	0
1134		THE COPPLE	0.94080	0 99777	2380.870		55496,000	MS6701	0
3 5		DADS BEGTUD GTTT	-7 40040	0 03642	2414 R20		55456 000	MS6701	0

TARGET RADAR METRICS

global target prominance measured relative to target-free background

------- BAND-polarization IR METRIC-measure of power

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PROPER   IN OPEN   Value   Parcellance   Contact   Con				los metric		renke	northing	esting	test	elevation
RIGHT FRONT IN OPEN   17.66700 0.89996	target		coment	velue		(meters)	(meters)	(meters)	ID	setting
Name	K113	FROME	TW OPEN	17,66700	0.89996	4204,000	75642,540	60685,090	MS5502	0
NIGHT FRONT IN OPEN   17,45780   0,99439   4,156,000   75543,160   60451,370   12,277   17,27130   0,99933   4,120,000   75543,160   60451,370   12,47130   12,47280   1,00000   1703,000   75553,160   60451,370   12,47280   1,00000   1703,000   75553,160   60451,370   12,47280   1,00000   1703,000   75553,160   60451,370   12,47280   1,00000   1703,000   75553,160   60451,370   1,000000   1,000000   1,000000   1,00000   1,000000   1,000000   1,000000   1,000000	MAS C	BEAR	THE COPIN	18.76400	1.00000	4298.000	75544.870	60691.750	MS5502	0
PROPER   STADED   1,45790   0,99993   1120,000   75553,150   64451,770   758041   759041	9	RIGHT FROMT	TA OPFN	9.60570	0.99438	4166.000	75641.670	60568.220	MS5502	0
PROFIT   SEADED   12,42260   1,000.00   1703.000   7444.130   57870.850   1470.850   1470.850   1703.000   7447.130   57870.850   1470.850   12,42260   1,000.00   1703.000   7447.130   57870.850   12,42260   1,000.00   2418.179   77101.230   5848.070   77101.230   771	2	LEFT FROM	IN OPEN	17.45790	0.99993	4120.000	75653.160	60451.570	MS5502	o
FRONT         STADED         12.42760         0.998615         1782.000         7847.130         778.8 50           REAM         SHADED         13.77110         0.998912         1738.000         7847.130         578.8 50           REAM         SHADED         13.77110         0.988912         1738.000         77216.232         77216.230         5884.6 70           RIGHT SIDE         IN OPEN         26.13250         1.0000         24.91.170         77216.232         77216.230         5884.6 70           RIGHT FRONT         IN OPEN         9.46520         0.98938         3170.000         77216.230         5870.06         5870.06         5870.06         5870.00	ZSU	FRONT	SRADED	24.54280	1.00000	1703.000	78488.700	57870.690	MS 5503	0
Profess   Prof	Š	FRONT	SHADED	12.42780	0.896/5	1782.000	78474.130	57878.950	PSS 5503	٥
NEAR   SHANED   15.56370   0.68697   2335.242   77216.210   28646.190   77216.210   77216.20   77216.210   77216	9	MOVER		14,77110	0.99932	1738.000			MS 5503	6
RIGHT SIDE   IN OPER	9	REAR	SHADED	15,58370	0.99997	2335.242	77301.210	58849.070	MS5504	6
FRONT         IN OPEN         16.39150         0.99996         3170.000         77884, 760         56555.840           RIGHT FRONT         IN OPEN         9.22100         0.99266         3017.000         7502.60         5670.860           RIGHT FRONT         IN OPEN         11.59600         0.99861         3050.000         75702.60         5885.840           FRONT         IN OPEN         11.59600         0.99861         3050.000         75702.60         58818-85           REAR         IN OPEN         21.17402         1.00000         75702.60         58818-85           REAR         IN OPEN         21.17402         0.99868         3550.000         7782-70         560.300         5614-62           REAR         IN OPEN         10.5120         0.99898         3550.000         7780-26         5614-62	S	RIGHT SIDE	IN OPEN	26.13290	1.00000	2419.179	77218,320	58836.180	HS 5504	0
RIGHT FRONT IN OPEN   9.52100   0.99256   3015 000   78003. 990   56700. 860   78003. 990   78	DECOY	FRONT	IN OPEN	16.39150	0.99998	3170.000	77894.780	56585.840	MS5601	٥
RIGHT FRONT         IN OPEN         1.5800         0.98439         3791.000         7585.740         5826.880           LEFT SIDE         IN OPEN         11.5800         0.98041         3792.000         7570.260         5991.00         7576.20         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         5991.00         7772.80         591.00         7772.80	H35	RIGHT SIDE	IN OPEN	9.52100	0.99266	3015.000	78003.890	56700.860	MS 5601	0
FRONT   IN OPEN   11.59800   0.99861   3950,000   75702.860   59919.850   75704   75702.860   59919.850   75704   75702.860	13	RIGHT FRONT	IN OPEN	9.40620	0.99439	3791.000	75865.740	58926.980	MS5602	
LEFT SIDE         IN OPEN         15.78920         0.98865         499.000         7576.200         5895.0870           REAR         IN OPEN         11.7470         1.00000         3551.000         7578.700         56170.000           REGIT         IN OPEN         21.17470         1.00000         3551.000         77878.700         56128.000           RIGHT SIDE         IN OPEN         16.58700         0.88880         3560.000         77877.480         5620.000           RIGHT SIDE         IN OPEN         10.61220         0.88880         3660.000         77877.480         5628.000           RIGHT SIDE         IN OPEN         2.67920         0.88231         2925.000         7643.800         59414.960           RIGHT SIDE         IN OPEN         17.7230         0.98933         3112.000         7648.523         50           LEFT RAAR         RIGHT FRONT         14.1860         0.98931         4456.000         7643.380         59314.490           RIGHT FRONT         12.22310         0.98931         3991.000         7643.380         59314.490           RIGHT FRONT         14.1860         0.98930         3991.000         7643.380         59314.490           RIGHT FRONT         1.4460         0.98930	E	FRONT	IN OPEN	11,59800	0.99861	3950.000	75702.860	59919.850	MS 5602	-
REAR         IN OPEN         21.17470         1.00000         3511.000         7922.700         56170 000           FRONT         BEHIND TREE         18.58200         0.99888         3550.000         77872.480         56170 000         7890.200         56140.00         7891.00         56140.00         7891.00	200	LEFT SIDE	IX OPEN	15.78920	0.99985	4030.000	75576.280	59950.870	MS 5602	-
PRONT   SEHIND TREE	5 CF	REAR	Nado al	21.17470	1.00000	3511.000	77928.700	\$6170.000	MS 5603	0
LEFT SIDE	5	FRONT	BEHIND TREE	18.56280	0.99998	3550.000	77890.260	56146.420	MS 5603	٥
RIGHT SIDE         IN OPEN         16.38700         0.98980         3041.000         7656.390         59466.020           RIGHT SIDE         IN OPEN         2.67920         0.98205         3065.000         7658.390         59440.020           LETT RAN         IN OPEN         2.67920         0.98203         3121.000         76576.80         59440.020           FRONT         SHADED         17.7230         0.98933         3214.000         7648.520         59421.170           LEFT RAN         IN OPEN         17.7230         0.98991         4456.000         7648.520         5931.490           LEFT RAN         RIGHT FRONT         14.15660         0.98917         4456.000         76435.380         5931.490           LEFT FRONT         14.15660         0.98917         4456.000         76435.380         5931.400           RIGHT FRONT         13.1660         0.98917         4456.000         76435.380         5931.400           RIGHT FRONT         12.7210         0.98928         3991.000         76435.300         76431.400           RIGHT FRONT         11.6600         0.98928         3991.000         76431.000         76431.000           RIGHT FRONT         12.62200         0.98928         2446.000         76431.00	180	LEFT STOE	TH OPEN	19,40530	0,99998	3660.000	77877.480	56029.000	MS5603	0
RIGHT SIDE         IN OPEN         10,61620         0,99203         3065,000         76538,660         59440,020           LEFT REAR         IN OPEN         2,67820         0,99203         3055,000         76578,600         59440,020           RIGHT SIDE         IN OPEN         17,73670         0,99903         3112,000         76488,530         59440,020           LEFT SIDE         RHIND TREES         12,8550         0,99917         456,000         76435,380         59334,490           LEFT FRONT         RIGHT FRONT         14,1560         0,99917         456,000         76435,380         59334,490           LEFT FRONT         14,1660         0,99917         456,000         76435,380         59334,490           RIGHT FRONT         14,1660         0,99917         456,000         76435,380         59334,490           RIGHT FRONT         12,7210         0,99917         456,000         76435,380         59334,490           RIGHT FRONT         12,7210         0,99920         3918,000         76435,380         59334,490           RIGHT FRONT         13,6120         0,99920         3990,000         76435,000         76435,000           RIGHT FRONT         13,6220         0,99920         2213,000         76435,000	20	RIGHT SIDE	IN OPEN	16.38700	0.99980	3041.000	76566.390	59495,020	MS5604	
LEFT REAR	150	RIGHT SIDE	IN OPEN	10.61620	0.99205	3065,000	78538.660	59440,020	MS 5604	<b>e-1</b>
FRONT         SHADED         17,7230         0.88893         3214,000         76387,810         58221,170           RIGHT SIDE         IN OPEN         17,73670         0.88893         3214,000         76488,520         59382,500           LEFT SIDE         BEHIND TREES         12,5550         0.98917         4456,000         76438,306         59382,500           LEFT RAM         14,18660         0.98917         4456,000         76438,306         59384,400           LEFT FRONT         14,18660         0.98917         4456,000         76438,306         59384,400           LEFT FRONT         13,3280         0.98917         4456,000         76438,306         59384           RIGHT FRONT         12,72310         0.98966         3960,000         76438,400         76400           RIGHT FRONT         13,4250         0.98966         3991,000         76436,000         76436,000           RIGHT FRONT         11,6402         0.98968         3991,000         76436,000         76436,000           RIGHT FRONT         2,240         0.98948         2,246,000         2,246,000         2,246,000           RIGHT FRONT         12,2520         0.98943         456,000         2,241,000         2,241,000           RIGHT	15	LEFT REAR	IN OPEN	2.67920	0.68231	2925.000	76676.870	59414.860	MS 5604	-
RIGHT SIDE	135	FRONT	SHADED	17,72330	0.99993	3214.000	76387.810	59421.170	MS 5604	~
LEFT SIDE BEHIND TREES 12,85550 0.98612 3153,000 76435.380 59334.480 LEFT REAM 14,18660 0.98917 4456.000 76435.380 59334.480 LEFT FRONT 14,18660 0.98917 4456.000 76435.380 59334.480 LEFT FRONT 14,18660 0.98917 4456.000 76435.380 59334.480 LEFT FRONT 10,33960 0.98269 4574.000 76435.380 59334.480 0.98917 4456.000 76435.380 59334.480 0.98917 4456.000 76435.380 59334.480 0.98917 4456.000 76435.380 59334.480 0.98917 4456.000 76435.380 59334 7460 0.98917 4456.000 76435.380 59334 7460 0.98917 4456.000 76435.380 59334 7460 0.98917 26459.000 76435.380 59334 74690 0.98917 2645.000 76435.380 76490 0.98918 76	1113	RIGHT SIDE	IN OPEN	17,73670	0.99993	3112.000	76488.520	59382.500	MS 5604	
LETT REAR   14,16660   0,98917   4455,000     RIGHT FRONT   14,15860   0,98917   4455,000     RIGHT FRONT   14,16660   0,98917   4456,000     RIGHT FRONT   10,3980   0,98269   4574,000     LETT FRONT   12,7210   0,98963   3800,000     RIGHT FRONT   13,4800   0,98963   3990,000     RIGHT FRONT   14,7160   0,98963   3990,000     RIGHT FRONT   14,7160   0,98963   3991,000     RIGHT FRONT   12,6220   0,98963   2213,000     LEFT FRONT   13,6220   0,99963   2213,000     LEFT FRONT   13,6220   0,99963   2213,000     LEFT FRONT   12,6200   0,99963   2657,000     RIGHT FRONT   12,6200   0,99963   4565,000     RIGHT FRONT   12,18090   0,99963   4565,000     RIGHT FRONT   12,2230   0,99863   4565,000     RIGHT FRONT   12,2230   1,99863   4565,000     RIGHT FRONT   12,2230   1	1113	LEFT SIDE	BEHIND TREES	12.85550	0.99812	3163.000	76435.380	59334,490	MS 5604	-
RIGHT FRONT	100	LEFT REAR		14,18680	0.99917	4456.000			MS 5702	
LETT FRONT	1113	RIGHT FROM		14.15880	0.99917	4570.000	•	•	MS5702	
RIGHT FRONT	960	LEFT FRONT		14.18680	0.99917	4456.000			MS5702	~
LEFT FRONT   12.72310   0.89913   3880.000   FRONT   17.4800   0.8996   3819 000   381	35	RIGHT FRONT		10.33990	0.99269	4574,000	٠		MS5702	-
FRONT         17.44800         0.89896         3819.000           N/A         14.71660         0.89887         3809.000           RIGHT FRONT         15.6120         0.89828         3991.000           RIGHT FRONT         11.68020         0.98546         2469.000           RIGHT FRONT         21.6020         1.00000         2346.000           RIGHT FRONT         13.6220         0.89893         2213.000           RIGHT FRONT         12.18090         0.89872         2657.000           RIGHT FRONT         12.5020         0.89842         2464.000           RIGHT FRONT         12.45020         0.89843         4586.000           RIGHT FRONT         13.7600         0.89843         4586.000           RIGHT FRONT         12.2230         0.89843         4586.000           RIGHT FRONT         12.2230         0.89843         4586.000           RIGHT FRONT         13.7800         0.89843         4586.000           RIGHT FRONT         13.2230         0.89863         4565.000	99	LEFT FRONT		12.72310	0.99913	3880.000	٠	•	MS5703	0
N/A	503	FRONT		17.44800	0.99996	3919.000		•	MS5703	0
RIGHT FRONT         15.65120         0.98983         3908.000           RIGHT FRONT         11.60620         0.98928         3991.000           RIGHT FRONT         4.61820         0.98546         2469.000           LEFT FRONT         21.60290         1.00000         2349.000           RIGHT FRONT         13.62520         0.98993         2213.000           RIGHT FRONT         12.10090         0.98922         2645.000           FRONT         7.23020         0.99923         2213.000           RIGHT FRONT         7.2400         0.99822         2644.000           RIGHT FRONT         13.78600         0.99843         4586.000           RIGHT FRONT         12.22530         0.99839         455.000           RIGHT FRONT         12.22530         0.99839         456.000           RIGHT FRONT         12.22530         0.99839         456.000           RIGHT FRONT         13.78600         0.99839         456.000	ECOY	V/X		14.71660	0.99987	3809.000		•	MS 5703	0
RIGHT FRONT         11.08020         0.99828         3991,000           RIGHT FRONT         4.61820         0.85546         248,000           RIGHT FRONT         21.60290         1.0090         23149,000           RIGHT FRONT         13.6220         0.89893         2213,000           RIGHT FRONT         12.18090         0.89872         2657,000           FRONT         7.2520         0.99822         2644,000           RIGHT FRONT         13.76600         0.99843         4586,000           RIGHT FRONT         12.22530         0.99839         455,000           RIGHT FRONT         12.22530         0.99839         456,000           RIGHT FRONT         12.22530         0.99839         456,000           RIGHT FRONT         13.7660         0.99839         456,000	960	RIGHT FRONT		15.65120	0.98983	3909.000			MS 5703	o
RIGHT FRONT         4.61820         0.95546         2469.000           RIGHT FRONT         21.80290         1.00000         2349.000           LEFT FRONT         13.6220         0.98993         2213.000           RIGHT FRONT         12.18090         0.98972         2657.000           FRONT         12.5020         0.9872         2644.000           RIGHT FRONT         13.76600         0.89843         4586.000           RIGHT FRONT         12.2230         0.89843         456.000           FRONT         12.2230         0.98843         456.000           FRONT         12.2230         0.98843         456.000           FRONT         12.2230         0.98983         456.000	1113	RIGHT FRONT		11.68020	0.99828	3991,000	•		MS 5703	0
RIGHT         21.80290         1.00000         2349.000           LEFT FRONT         13.6220         0.98993         2213.000           RIGHT FRONT         12.18090         0.98772         2657.000           FRONT         12.56200         0.9872         2644.000           FRONT         7.25020         0.9752         2012.000           RIGHT FRONT         13.76600         0.98843         4586.000           RIGHT FRONT         12.2230         0.98839         4556.000           BYCHT         15.2820         0.98983         4456.000           BYCHT         4544.000         4544.000	180	RIGHT PRONT		4.61820	0.95546	2469.000			MS5704	o
LEFT FRONT 13.62520 0.99993 2213.000 12.13.000	1113	RIGHT FRONT		21.80290	1.00000	2349.000		•	MS5704	0
RIGHT FRONT         12.10090         0.98772         2657.000           LEFT FRONT         12.6420         0.98622         264.000           FRONT         7.2502         0.97752         2612.000           RIGHT FRONT         13.76600         0.98943         4586.000           RIGHT FRONT         12.22530         0.98839         4565.000           BYGHT FRONT         13.22530         0.98983         456.000           BYGHT FRONT         0.08983         456.000	435	LEFT FRONT		13,62520	0.99993	2213.000			MS5704	ø
LEFT FRONT 12.64200 0.89822 2644.000 FRONT 7.25020 0.9752 2612.000 RIGHT FRONT 13.76000 0.89843 4586.000 FRONT 12.22530 0.99839 4585.000 FRONT 15.22520 0.99883 4456.000 FRONT 15.2520 0.99888 4456.000	20.5	RIGHT FROM		12.18090	0.99772	2657,000			MS5801	<b>~</b>
FRONT 7.25020 0.97752 2612.000 13.76000 0.98843 4586.000 12.2230 0.98843 4586.000 12.2230 0.98843 456.000 12.2230 0.98843 456.000 19.7631 FRONT 15.2520 0.98988 4456.000 19.7631 FRONT 0.24870 0.98988 4456.000 19.7631 FRONT	180	LEFT FRONT		12.64200	0.89622	2544.000		•	MS 5801	-
RIGHT FRONT         13,76600         0.98843         4586.000         12,2230         0.98839         4565.000         12,2230         0.98839         4565.000         13,7800         13,2230         0.98983         4456.000         13,2230         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         0.98983         4456.000         13,2430         13,24	1113	TRONT		7.25020	6.97752	2612.000		•	MS5801	
RIGHT FRONT 12,22530 0,99839 4565,000 FRONT 15,23920 0,99985 4456,000 britat Front 6,24570 0,90081 4574,000	8	RIGHT FRONT		13,76600	0.98843	4586.000			MS5602	~
FRONT 15,23920 0.99985 4456.000 print Technic 24570 0.99281 4574.000	6113	RIGHT FRONT		12,22530	0.99839	4565,000			HS5802	-
BATTON TO THE STATE OF THE STAT	200	TOURT		15, 25920	28000	44.56 000	•		MS 5802	-
		DICES TOURS		0 24870	0.00283	4574 000	•	•	MS 5802	

TARGET RADAR METRICS

global target prominence measured relative to target-free background

...... BAND-polarization LR METRIC-measure of power ......... (continued)

24.75130
16.32840
17.97440
-1.86940
4.88500
16.99280
15.03400
16.44250
11 00040
20.78940
19.10570
8.06670
12,37620
12.93680
10.15690
20.38900
15.580/0
11.93880
19,19210
21.29690
16.08440
14.84480
13.05320
19.36470
31.13360
21.71140
11.90700
5.87220
3.95130
15, 55490
17.65240

TARGET RADAR METRICS

global target prominence measured relative to target-free background

- 6 4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5		(contined)	DANU-POLETA EST	ton LK FEIKIC-me (continued)	asure of por	1 T			
target orientation	4tion	comment	los metric value	global target prominence	ranga (meters)	UTM northing (meters)	UTM esting t (meters) I	test ID	elevation setting
	RONT	WITH BRUSH	6.35800	0.94701	2494,040	79165.000	55519.000		0
	ROMT	IN OPEN	10.93780	0.98633	2490,270	79192.000	55533.000	MS6603	0
	FRONT	IN OPEN	11.31910	0.99798	2333,730	78471,000	55541.000		0
		IN OPEN	15.55070	0.99987	2380,870	78504.000	55496.000		0
M35 LEFT SIDE	IDE	PART BEHIND HILL	7.07050	0.98705	2414.820	78558,000	55466,000		0
	100	FAMI DEBING STALL	777.7	7.00.0		040.F4F4		200.000	200.00100

TARGET RADAR METRICS

global target prominence measured relative to target-free background

				•		ELD :	MIN	•	
			log metric	global target	range	northing	easting	test	*Levetion
target	orientation	comment	value	prominence	(meters)	(meters)	(meters)	2	setting
4113	FRONT	IN OPEN	11.15890	0.98972	4204.000	75642,540	60686.090	MS5502	0
980	REAR	IN OPEN	2.76000	0.83156	4298.000	75544.870	60691,750	MS5502	0
9	RIGHT FROMT	IN OPEN	13.68050	0.99974	4166.000	75641.670	60568.220	MS5502	0
35	LEFT FROMT	IN OPEN	11.40070	0.08972	4120.000	75653.160	60451.570	MS5502	0
กรร	FRONT	SHADED	16.52610	1.00000	1703.000	78488,700	57970.690	MS5503	0
35	FROMI	SHADED	8.56180	0.98853	1782.000	78474.130	57878,950	MS5503	0
69	MOVER		12.32380	1.00000	1738.000		•	MS5503	0
99	REAR	SHADED	8.31290	0.99931	2335.242	77301.210	58849.070	MS5504	0
193	RIGHT SIDE	IN OPEN	22,22880	1.00000	2419.179	77218.320	58836.180	MS5504	0
ECOY	FRONT	IN OPEN	11.68300	1.00000	3170.000	77894.780	56585.940	MS 5501	0
<b>33</b> 5	RIGHT SIDE	IN OPEN	6.68400	0.99799	3015.000	78003,990	56700.860	MS 5601	0
H113	RIGHT FRONT	IN OPEN	8.44980	0.99875	3791,000	75865.740	59926.980	MS 5602	-
E31	FROMT	IN OPEN	9.01910	0.99921	3950.000	75702.860	58918.850	MS5602	-
960	LEFT SIDE	IN OPEN	12.11110	1.00000	4080.000	75576.280	59950,970	MS 5602	-
435	REAR	IN OPEN	12.05480	0.99925	3511.000	77828.700	56170.000	MS5603	0
35	FRONT	Berind tree	17.16740	1.00000	3550.000	77890.250	56146.420	MS5603	0
20	LEFT SIDE	IN OPEN	15.58990	0.99998	3660.000	77877.480	55029.000	MS 5603	0
99	RIGHT SIDE	IN OPEN	11.79950	0.98958	3041.000	76566.390	59486.020	MS 5604	-
8	RIGHT SIDE	IN OPEN	9.66850	0.99862	3065.000	76538,660	58440.020	MS 5604	-
AH1	LEFT REAR	IN OPEN	5.41080	0.88472	2925.000	76676.870	59414.850	MS 5604	-
35	FRONT	SRADED	8.46570	0.89645	3214,000	76387.810	58421.170	MS 5604	-
113	RIGHT SIDE	IN OPEN	7.94100	0.99681	3112.000	76488.520	59382.500	MS 2604	
41.13	LEFT SIDE	BEHIND TREES	8,33520	0.89756	3163,000	76435.380	59334.480	MS 5604	-
160	LEFT REAR		11.72120	0.88883	4456.000	•	•	MS 5702	***
M113	RIGHT FRONT		6.60320	0.99895	4570.000	•		HS5702	-
2	LEFT FRONT		9.84320	0.98928	4456.000		•	MS5702	<b>,</b> 1
35	RIGHT FRONT		7.61080	0.99847	4574,000	•	٠	PES 3702	
90	LEFT FRONT		7.70690	0.89795	3887.000			MS5703	0
35	FRONT		8.16710	0.99855	3918.000			MS 5703	0
Soz	M/A		7.46370	0.99762	3809.000			MS 5703	0
980	RIGHT FRONT		12.00300	1.00000	3809.000			MS 5703	0
4113	RIGHT FRONT		4.19080	0.96666	3991.000			MS 5703	٥
2	RIGHT FRONT		6.97400	0.98949	2469.000			MS 5704	0
H113	RIGHT FRONT		15.35350	1.00000	2349.000			MS 5704	0
35	LEFT FRONT		5.28240	0.99533	2213.000	•		MS5704	0
<b>33</b>	RIGHT FRONT		6.66910	0.98699	2657.000	•		MS 5801	-
8	LEFT FRONT		6.66910	0.88699	2644,000		•	MS\$801	~
4113	FROMT		3.91330	0.93927	2612.000			MS 5801	
435	RIGHT FRONT		10.01830	0.99974	4396.000			PKS 5802	
4113	RIGHT FRONT		6.56550	0.99757	4565.000		٠	MS 5802	-
ECOY	FRONT		13.54180	1.00000	4458,000	•		MS 5802	-

TARGET RADAR METRICS

global target prominence measured relative to target-free background

terget orientation	.et lon	2 nauto 2	log metric value	global target prominence	renge (meters)	UTM northing (meters)	UTM easting (meters)	test ID	alevation setting
ESU REAR			15.04370	0.99977	1481,000	-		HS5803	-
			7,75670	0.87669	1352.000			MS5803	1
			16.42250	0.9983	1484.000			MS5803	
760 LEFT SIDE	TIDE		12.36230	0.99867	1376.000		•	MS 5803	-
_			13,38560	0.99877	4570,000			MS5804	1
460 RIGHT SIDE	SIDE		3,19530	0.95094	4456.000			MS 5804	<b>+</b>
_	TOE	UNDER TREES	7.89430	0.99502	3878,000	79437,000	54153.000	MS 6001	
	RONT	UNDER TREES	5,43160	0.98263	3898.000	79490.000	54147.000	MS 6001	1
405 LEFT FRONT	ROHT	UNDER TREES	7.68060	0.99463	3919.000	79570.000	54151.000	MS6001	-
ANI LEFT SIDE	30I:	BEHIND TREETOP	3.84030	0.96130	4184.000	79273.000	53793,000	MS6002	0
HILLS UNICHOWN	æ	BEHIND TREETOP	6.01970	0.98922	4138,000	79292.000	53845.000	MS6002	0
4113 UNICHOMY	æ	BEHIND TREETOP	3,01510	0,93373	4170.000	79318,000	53618.000	MS6002	0
_	SIDE	IN OPEN	8,09180	0.99819	3645,000	79466.000	54196.000	MS6002	0
_	SIDE	BEHIND TREETOP	7.39680	0.89584	3852.000	79495.000	54197.000	MS 5002	o
_	IDE	IN OPEN	6,18650	0.99665	3643,000	79424,000	54185.000	MS 6004	0
_	FRONT	IN OPEN	13.35100	0.8888.0	3878,000	79437.000	54153,000	MS 6004	0
_	HONT	UNDER TREES	7.75170	. 99585	3898,000	79490,000	\$4147,000	MS6004	0
	SIDE	IN OPEN	18.62540	1.00000	3919,000	19570,000	54151.000	MS6004	0
	1	BEHIND TREETOP	12.11970	0.88831	4184,000			MS6101	<b>.</b>
AND RIGHT SIDE	SIDE	BENING TREES	4.5/830	0.98055	4 159.000	000.78887	33839.000	1010101	<b>5</b> 6
TO LEFT SIDE	2010	IN OFTER	05140.8	323/3.0	3843.000	70400 000	54147 000	Merior	<b>&gt;</b> c
	ALD!	HEAT TALE	11 7830	5766.0	3919 000	20.05		MS 5101	
_	THOR	BEHIND TREETOP	3 35180	0.94748	4142.000	79372,000	53660,000	MS6102	-
_		IN TREES	15.12600	1,0000	3898.000	79490,000	54147.000	MS6102	-
ZSU LEFT SIDE	IDE		9.17380	0.89637	3919.000			MS6102	-
460 LEFT FRONT	RONT		17.75970	0.09964	1969,000			HS63011	0
-	FRONT	IN OPEN	13,61080	0.98958	1963.000	78576,000	55922.000	MS63011	0
460 LEFT FRONT	RONT	IN OPEN	14,54950	0.99974	1922.000	78598,000	55966.000	MS63011	0
	RONT	IN OPEN	25.64320	1.00000	1985,000	78620,000	55906,000	MS63011	0
_		IN OPEN	14.59250	0.99944	3130.000	79143,000	54847.000	MS63012	o
MILLS RIGHT SIDE	SIDE	FRONT OF TAPES	13,89460	0.88930	3080,000	79173 000	54895.000	MS63012	0
THI REAR		IN OPEN	9.97160	0.89712	3045,000	79175,000	24944.000	MS63012	0
MIIS LEFT SIDE	IDE	IN OPEN	20.22610	1,00000	3078,000	79208,000	54919.000	MS63012	0
460 LEFT SIDE	IDE	TOP SHOWING	29.50150	1.00000	1656,000	79038,000	56371.000	MS6403	0
460 RIGHT SIDE	SIDE	TOP SECHING	32.41010	1,00000	1590,000	78025.000	\$6438,000	HS6403	0
THOMA LETT FROM	ROFT	TOP SHOWING	22.70160	1,00000	1510.000	78999,000	56514.000	MS6403	0
4113 RIGHT FROM	FRONT	TOP SHOWING	9.65150	0.99870	1646,000	79070 000	56398,000	HS6403	0
JRI PICHT REAR	REAR	IN OPEN	10.92850	0.99841	1483.000	79013,000	56553.000	MS6403	0
THO PLICHT	FRORT	IN OPEN	11.66400	60686 0	2510.810	79085.000	55475.000	MS6603	0

TARGET RADAR METRICS

global target prominence messured relative to target-free background

	***************************************	BAND-polarization LR METRIC-aignel to clutter (continued)	BAND-polerizati	on LR METRIC-sign (continued)	ael to clutt	1 1 1 1 1 1 1 1 1			
target	orientation	comment	log metric value	global target prominence	range (meters)	UTM northing (meters)	UTM easting (meters)	test	elevation setting
M113 M113 M113 K25U	LEFT FRONT LLEFT FRONT RIGHT FRONT REAN LEFT SIDE	WITH BRUSH IN OPEN IN OPEN IN OPEN PANT BEHIND HILL	7.28500 3.79390 5.69560 6.38750 4.16050	0.99104 0.94098 0.96304 0.98779	2484,040 2480,270 2333,730 2360,870 2414,820	79165,000 79192,000 76471,000 78504,000	55518,000 55533,000 55541,000 55486,000 55468,000	MS6603 MS6803 MS6701 MS6701 MS6701	0000

TARGET RADAR METRICS

global target prominence measured relative to target-free background

BAND-polarization LR METRIC-variance

						<b>M</b> In	MIN		
			log metric	globel target	range	northing	easting	test	•levetion
terget	orientation	comment	value	prominence	(meters)	(meters)	(meters)	a	setting
H113	FRONT	IN OPEN	2,59660	0,99787	4204.000	75642,540	60686.090	MS5502	0
260	REAR	IN OPEN	4,33180	0.99919	4298.000	75544.870	60681.750	MS5502	٥
360	RIGHT FRONT	IN OPEN	-3.02320	0.93150	4166.000	75641.670	60568.220	MS 5502	0
Š	LEFT FRONT	IN OPEN	4.49330	0.89924	4120.000	75653.160	60451.570	MS5502	٥
230	FRONT	SRADED	11.64650	1.00000	1703.000	78488.700	57970.690	MS5503	0
£	FRORT	SRADED	0.36680	0.96372	1782.000	78474.130	57878,950	MS 5503	0
160	HOVER		2.63040	0.99104	1738.000	•		MS 5503	o
<b>1</b> 60	REAR	SEADED	1.72450	0.99898	2335.242	77301.210	\$8841,070	MS 5504	0
CH)	RIGHT SIDE	IN OPEN	12,80930	1.00000	2419.179	77218.320	58836 180	MS 5504	0
DECOY	FRONT	IN OPEN	1,40240	0.99523	3170.000	77894.780	56585,940	MS 5601	0
<b>F</b> 35	RIGHT SIDE	IN OPEN	-2,53430	0.94423	3015.000	78003.990	SE700,860	MS 5601	o
M113	RIGHT FRONT	IN OPEN	-3,61380	0.91700	3791.000	75865.740	59926,980	MS 5602	
180	FRONT	IN OPER	-0.52050	0.98240	3950.000	75702.860	59919.850	MS 5602	-
160	LEFT SIDE	IN OPEN	2,80890	0.89745	4080.000	75576.280	59950.970	MS 5602	~
<b>K</b> 05	REAR	IN OPEN	7.73860	1.00000	3511.000	77828.700	56170.000	HS 5603	0
<b>#35</b>	FRONT	BERIND TREE	4.57440	0.99866	3550.000	77690.260	56146.420	MS 5603	0
nsz	LEFT SIDE	IN OPEN	6.97670	1.00000	3660.000	77877.460	56029.000	PS 5603	0
₩ <b>9</b>	RIGHT SIDE	IN OPEN	3,72560	0.99676	3041.000	7£ 566.390	59496.020	MS 5604	7
₩ 1	RIGHT SIDE	IN OPEN	-1,70260	0.91709	3065.000	76538.660	59440.020	HS 5604	7
AB1	LEFT REAR	IN OPEN	-8.41530	0,56540	2925.000	76676.870	59414.960	MS 5604	
M35	FRONT	SHADED	5,66140	0.99939	3214.000	76387.810	59421.170	MS 5604	
M113	RIGHT SIDE	IN OPEN	3.42670	0.89519	3112.000	76488.520	59382,500	MS 5604	-
M113	LEFT SIDE	BERIND TREES	-0.02840	0.86649	3163.000	76435.380	59334,490	MS 5604	
<b>₩</b>	LEFT REAR		1.35780	0.98414	4456.000	•		MS 5702	
M113	RIGHT FRONT		-0.17840	0.96898	4570.000	,	٠	HS5702	
¥60	LEFT FRONT		1,35780	0.98414	4456.000			MS 5702	
M35	RIGHT FRONT		-2.84330	0.90148	4574.000			MS 5702	-
H60	LEFT FRONT		-0.27860	0.97506	3880.000			MS5703	0
M35	FRONT		3,31360	1.00000	3919.000		٠	MS 5703	0
DECOY	N/A		0.31960	0.98426	3809.000		٠	MS 5703	0
9	RIGHT FRONT		3.07620	0.89980	3909.000		٠	MS 5703	0
H113	RIGHT FRONT		0.96390	0.99166	3991.000			MS 5703	Ð
960	RIGHT FRONT		-7.72920	0.71207	2469.000	•		MS 5704	0
M113	RIGHT FRONT		9 80830	1.00000	2349.000			MS 5704	<sub>D</sub>
£0%	LEFT FRONT		1.94060	1.00000	2213.000			MS 5704	0
H3S	RIGHT FRONT		-0.18990	0.86734	2657.000			HS 5801	
<b>3</b> 60	LEFT FRONT		0.63670	0.97950	2644.000			MS5801	
M113	FRORT		-4.24080	0.88213	2612,000	•		HS 5801	~
H35	R.GHT FRONT		2.49290	0.89572	4596,000			HS5802	
H133	RIGHT FRONT		-0.78500	0.97822	4565.000			MS5802	7
DECOY	FRONT		0.25950	0.98713	4456,000	×		HS 5802	-
1460	RIGHT FRONT		-4.59390	0.88457	4574.000			MS 5802	**

TARGET RADAR METRICS

global target prominence measured relative to target-free background

						EE5	E S		
			log metric	global target	range	northing	eesting	test	elevation
target	orientation	comment	value	prominence	(meters)	(meters)	(meters)	ឧ	setting
1157	REAR		7.31890	1.00000	1481.000	·		MS 5803	~
9	REAR		-5.74460	0.88097	1352,000			MS5803	-
H113	FROM		-1.26530	0.98538	1484.000			MS5803	
9	LEFT SIDE		3.62550	0.99901	1376.000			HS 5603	-4
H113	PROFT		10.21290	1.00000	4570.000			MS5804	-1
9	RIGHT SIDE		4.54710	0.99897	4456.000		-	MS5804	н
H113	LEFT SIDE	UNDER TREES	4.10920	0.89707	3878.000	78437.000	54153.000	MS6001	7
535	LEFT FRONT	UNDER TREES	3.51770	0.99540	3898.000	79490.000	54147,000	MS6001	-
735	LEFT FRONT	UNDER TREES	4.19910	0.89719	3919.000	79570.000	54151,000	MS6001	-
£	LEFT SIDE	BEHIND TREETOP	-15.19320	0.68889	4184.000	79273.000	53793.000	MS6002	0
H113	UNCHON	BEHIND IREETOP	-7.91570	0.89208	4138.000	79292.000	53845.000	MS6002	o
M113	NACADINI	BEHIND TREETOP	-13,02650	0.77044	4170.000	79319.000	53818.000	MS6002	0
£3.	RIGHT SIDE	IN OPEN	5.16680	0.99866	3845,000	79466,000	54196,000	MS6002	0
M3 5	RIGHT SIDE	BEHIND INECTOR	2.85100	0.99772	3852.000	79495,000	54197.000	MS6002	o
996	LEFT SIDE	IN OPEN	3.49120	1.00000	3843,000	79424.000	54185,000	MS6004	0
M113	RIGHT FRONT	IN OPEN	4.64150	1.00000	3878.000	79437,000	54153.000	PSS 6004	0
H113	LEFT FRONT	UNDER TREES	1.05240	0.99627	3898,000	79490,000	54147,000	MS6004	0
H35	RIGHT SLDE	IN OPEN	10,33000	1.00000	3919.000	79570.000	54151,000	MS6004	0
H35	FRONT	BERIND TREETOP	7.89270	0.99919	4164,000			MS6101	٥
H35	RIGHT SIDE	BEHIND TREES	-4.66450	0.96299	1169 000	78397.000	53839,000	MS6101	0
9	LEFT SIDE	IN OPEN	4.58530	0.99646	3843,000	79424,000	54185.000	MS6101	0
nsz	LEFT FRONT	MEAR TREE	-2,11650	0.98357	3896.000	78490.000	54147.000	MS6101	0
₩20	RIGHT SIDE		2, 57950	0.99794	3919.000		•	MS6101	0
H113	LEFT FROM	BEHIND TREETOP	-2.02840	0.97049	4142.000	78372.000	53860.000	MS6102	
H113	FRONT	IN TREES	8.53700	1.00000	3688.000	78490.000	54147,000	MS6102	7
ns2	LEFT SIDE		4.10760	0.99848	3819,000			MS6102	
190	LEFT FRONT		3.51880	1.00000	1969,000	•		MS63011	0
9	RIGHT FROM	IN OPEN	1.58600	1.00000	1963.000	78576.000	55922,000	PS 63011	o
180	LEFT FRONT	IN OPEN	8,65930	1.00000	1922.000	78598,000	55966.000	MS63011	0
9	LEFT FROM	IN OPEN	7.33470	1.00000	1985.000	76620.000	55906,000	MS63011	0
nsz	FRONT	IN OPEN	3,38240	1.00000	3130.000	79143.000	54847,000	MS63012	٥
H113	RIGHT SIDE	FRONT OF TREES	4.69910	1.00000	3080.000	79173.000	54896,000	MS63012	•
1961	REAR	IN OPEN	-0.23400	0.98787	3045.000	79175.000	54944,000	MS63012	٥
M113	LEFT SIDE	IN OPEN	7.47920	1.00000	3078.000	79208.000	54919.000	MS63012	٥
160	LEFT STDE	TOP SHOWING	18.31240	1.00000	1656.000	79038.000	56371.000	MS6403	0
094	RIGHT SIDE	TOP SHOWING	10.88900	1.00000	1580.000	79025.000	55438,000	MS6403	0
ns:2	LEFT FRONT	TOP SHOWING	1.01730	1.00000	1510.000	78999.000	56514,000	PS6403	٥
H113	RIGHT FROM	TOP SHOWING	-4.16540	0.99450	1645.000	79070,000	56398,000	MS6403	0
181	RIGHT REAR	IN OPEN	-5,73090	0.98636	1483.000	79013.000	56553.000	HS6403	0
9	THORS TRUTH	IN OPEN	04040	99100	0.0	2000	000 35.75		•
					270.0707	000.00087	2000.00	20000	3

elevation setting 00000 test ID MS6603 MS6701 MS6701 MS6701 MS6701 UTH easting (meters) 55519,000 55531,000 55546,000 55566,000 global target prominence measured relative to target-free background UTM northing (meters) 79165.710 79182.000 78471.000 78504.000 78558.000 range (meters) 2494.040 2490.270 2333.730 2380,870 2414.820 TARGET RADAR METRICS log metric global target value prominence 0.53890 0.92841 0.68750 0.99848 4.03120 0.99848 -5.18070 0.89207 WITH KRUSH IN OPEN IN OPEN IN OPEN PART BEHIND HILL LEFT FRONT LEFT FRONT RIGHT FRONT REAR LEFT SIDE orientetion M60 M113 M113 M133 M35

TARGET RADAR METRICS

global target prominence measured relative to target-free background

BAND-LR/RR MUTRIC-polarization ratio

			100 act	toke!		MIS	MED	1	e) evert for
target	orientation	comment	velue	prominence	(meters)	(meters)	(meters)	A	setting
M113	FRONT	IN OPEN	6.78560	0.04552	4204.000	75642.540	60685.090	MS 5502	0
<b>H</b> 80	REAR	IN OPEN	8.92010	0.99088	4298.000	75544,870	60691.750	MS 5502	0
094	RIGHT FRONT	IN OPEN	4.37470	0,73755	4166.000	75641.670	60568.220	MS5502	0
H35	LEFT FROM	IN OPEN	5.51520	0.66971	4120.000	75653,160	60451.570	MS5502	0
nsz	FRONT	SHADED	9.46490	0.99642	1703.000	78488,700	57970.690	MS5503	٥
M3.5	FRONT	SHADED	8,59850	0.99084	1762.000	78474,130	\$7878.950	MS5503	0
<b>H</b> eo	HOVER		5.86580	0.90997	1738.000		•	MS 5503	0
<b>M</b> 60	REAR	SHADED	4.85520	0.77102	2335.242	77301.210	58649.070	MS5504	o
UHI	RIGHT SIDE	IN JPEN	16.61450	1.00000	2419.179	77218.320	58836.180	MS5504	0
DECOY	FRONT	IN OPEN	10.66980	0.88784	3170.000	77894.780	56585.940	MS 5601	9
M35	RIGHT SIDE	IN OPEN	8.07540	0.97447	3015.000	78003.990	56700.860	MS5601	0
H113	RIGHT FRONT	IN OPEN	8.33130	0.97829	3791.000	75865.740	59926.980	MS 5602	7
UH1	FRONT	IN OPEN	8,10990	0.87503	3950,000	75702.860	58919.850	MS5602	-
M60	LEFT SIDE	IN OPEN	9.98190	0.99434	4080.000	75576.280	59950.970	HS \$602	
M35	REAR	IN OPEN	8,73080	0.98579	3511.000	77928.700	\$6170,000	MS 5603	0
M35	FRONT	BEHIND TREE	14.66520	1.00000	3550.000	77890.260	56146.420	MS5603	0
ns2	LEFT SIDE	IR OPEN	9.84310	0.99447	3660.000	77877.480	55029,000	MS 5603	<b>-</b>
H60	RIGHT SIDE	IN OPEN	7.42480	0.97534	3041.000	76566.390	59496.020	MS5604	-
M60	RIGHT SIDE	IN OPEN	5,54050	0.91023	3065.000	76536,660	59440.020	MS 5604	<b>,-4</b>
AHI	LEFT REAR	IN OPEN	3.09970	0.67952	2925.000	76676.870	59414.860	MS 5604	-
<b>7135</b>	FRONT	SHADED	9.70680	0.99538	3214.000	76387.810	59421.170	MS 5604	7
M113	RIGHT SIDE	IN OPEN	10.07280	0.89669	3112.000	76488,520	59382.500	MS 5604	
H113	LEFT SIDE	BEHIND TREES	10.55100	0.99807	3163.000	76435,380	59334.490	MS 5604	7
¥60	LEFT REAR		5.60030	0.88856	4456.000			MS5702	
M113	RIGHT FRONT		9.08670	0.98334	4570.000	•	•	MS5702	-
<b>H</b> 60	LEFT FRONT		9.17240	0.99388	4456.000			MS5702	~
M35	RIGHT FRONT		4,13550	0.74147	4574.000		•	HS5702	
M50	LEFT FRONT		7.06190	0.91997	3880.000	•		MS5703	0
M35	FRONT		7.86990	0.95241	3918.000			MS5703	6
DECOY	N/A		9.82490	0.98856	3809.000			MS5703	0
1460	RIGHT FRONT		11.31940	0.99705	3909,000			MS5703	-
M113	RIGHT FRONT		6.24320	0.86453	3991.000			MS 5703	0
H60	RIGHT FRONT		6.89290	0.94769	2469.000			MS5704	0
M113	RIGHT FRONT		12.86530	0.99985	2349,000			MS 5704	0
M35	LEFT PRONT		7.51990	0.96726	2213.000			MS5704	
M35	RIGHT FRONT		6.63560	0.92685	2657.000			MS5801	1
M60	LEFT FRONT		7.45380	0.95905	2644,000			MS 5801	-
M113	FRONT		5.11850	0.82393	2512.000	•		MS 5801	•4
M35	RIGHT FRONT		10.33660	0.99503	4596.000			MS5802	-
M113	RIGHT FRONT		4.66230	0.85836	4565,000			MS5802	-
DECOY	FRONT		14.58000	0.89991	4456.000		•	MS5802	
H60	RIGHT FRONT		7.42360	0.97924	4574.000			MS5602	

TARGET RADAR METRICS

global target prominence measured relative to target-free background

Larget	orientation	comment	log metric velue	global target prominence	range (meters)	UTH northing (meters)	UTM easting (meters)	test ID	elevation setting
100	BEAR		14.24220	0.89161	1481,000		•	MS 5803	-
29	REAR		6.08590	0.75542	1352,000		•	HS 5803	-
4113	FRONT		10.74400	0.95666	1484.000		٠	MS5803	H
9	LEFT SIDE		1.86240	0.30635	1376.000			MS 5803	1
1113	FRONT		15.22790	1.00000	4570,000		٠	MS5804	-
9	RIGHT SIDE		7.59710	0.98222	4456.000		•	MS5804	
4113	LEFT STDE	UNDER TREES	9.41880	0.98394	3878,000	78437,000	54153,000	MS6001	
25	LEFT FRONT	UNDER TREES	10.60130	0.88326	3898.000	79490.000	54147.000	MS6001	-
585	LEFT FRONT	UNDER TREES	9.88460	0.98811	3818.000	79570,000	54151.000	MS6001	<b>-</b> 4
AH1	LEFT SIDE	BEHIND TREETOP	5.32710	0.85258	4184.000	78273.000	53783.000	MS6002	0
H113	UNICHONIA	BEHIND TREETOP	6.18450	0.90685	4138.000	78292.000	53845.000	MS6002	0
H113	UNIXIONIE	BEHIND TREETOP	4.60140	0.81171	4170.000	78318,000	53818.000	FS6002	0
503	RIGHT SIDE	IN OPEN	6.42700	0.91625	3845.000	79466.000	54186.000	MS8002	0
H35	RIGHT SIDE	BEHIND TREETOP	12.52600	0.99875	3852.000	78495.000	54197.000	MS6002	Ġ
99	LEFT SIDE	IN OPEN	8.71450	0.86411	3843,000	79424.000	54185.000	MS6004	0
M113	RIGHT FRONT	IN OPEN	8.69320	0.98411	3878.000	78437.000	54153.000	MS6004	0
M113	LEFT FRONT	UNDER TREES	6.03360	0.97354	3898.000	78490.000	54147.000	MS6004	0
435	RIGHT SIDE	IN OPEN	15.32860	0.99994	3919.000	79570.000	54151.000	HE26004	0
M35	FRONT	BEHIND TREETOP	8.64900	0.98799	4184.000			HS6101	0
M35	RIGHT SIDE	BERIND TREES	8.82090	0.98954	4169.000	79397,000	53839.000	MS6101	۰ ،
<b>1</b> 00	LEFT SIDE	IN OPEN	04858.4	0.88472	3843.000	79424.000	24165.000	H25101	<b>-</b> (
082	LEFT FROM	NEAR TREE	0.486/0	0.83013	3696.000	18480.000	24747.000	TOTACE.	•
29	RIGHT SIDE		W. 34210	0.99251	3818.000			101901	۰ د
M113	LEFT FRONT	BEHIND TREETOP	7.34930	0.96189	4142.000	79372.000	53860.000	MS6102	
1113	FROME	IN INCES	09787.0	21//8.0	3886.000	18480.000	24147.000	701054	٠,
ns.	LEFT SIDE		12.63950	0.99880	3919.000			MS6102	٠, د
9	TELL PROME		008/8.0	RORCH O	000.8087			1100000	•
9	RIGHT FRONT	IN OPEN	4.30480	0.82663	1963.000	78576.000	55822.000	MS63011	<b>-</b>
200	LEFT PROME	IR OFEN	0.50580	88808.0	1877 . 000	000.0800/	0000.0000	Theory	۰ د
9	LEFT FROM	IN OPEN	4.69050	0.66119	1885.000	78620.000	55906.000	FS63011	<b>.</b>
รรถ	FROM	IN OPER	6.08440	0.90271	3130.000	79143.000	24847.000	MS63012	9
H113	RIGHT SIDE	FRONT OF TREES	9.70080	0.98951	3080.000	79173.000	54896.000	MS63012	0
125	REAR	IN OPEN	6.91910	0.88129	3045.000	79175.000	54844.000	MS63012	0
M113	LEFT SIDE	IN OPEN	6.86360	0.63614	3078.000	79208.000	54919.000	MS63012	0
180	LEFT SIDE	TOP SHOWING	28.10950	1.00000	1656.000	79038.000	56371.000	MS6403	0
180	RIGHT SIDE	TOP SHOWING	12.74780	0.88839	1590.000	78025.000	56438,000	MS6403	0
23U	LEFT PROM	TOP SHOWING	4.66440	0.88964	1510.000	78999.000	56514.000	MS6403	0
H113	RIGHT FROM	TOP SHOWING	3.26420	0.75645	1646.000	79070,000	56398,000	PS6403	۰
IH.	RI 38T REAR	IN OPEN	4.22490	0.64981	1483.000	79013,000	56553,000	PS6403	0
9	RIGHT FRONT	IN OPEN	4.75980	0 A4758	2510 810	70084 000	****	Manage	•
ž							200.000	70000	>

TARGET RADAR PETRICS

## global target prominence measured relative to target-free background

. a . a . a . a . a . a . a . a . a . a	elevation setting	0000
	test ID	MS6603 MS6603 MS6701 MS6701 MS6701
1 k	UTM easting (meters)	55533,000 55543,000 55541,000 55496,900 55466,000
	UTH northing (meters)	79165,000 79192,000 78471,000 78504,000 78558,000
tion ratio -	range (metera)	2494,040 2480,270 2333,730 2380,870 2414,820
METRIC=polariza (continued)	global target prominence	0.77638 0.64675 0.78802 0.96684 0.92145
- BAND-LR/RR	log metric value	4.04400 2.89210 5.12710 8.39680 7.00210
(continued)	comment	WITH BRUSH IN OPEN IN OPEN IN OPEN PART BEHIND HILL
• • • • • • • • • • • • • • • • • • •	orientation	LEFT FRONT LEFT FRONT RIGHT FRONT REAR LEFT SIDE
	د 100 د تو	H50 H113 H113 25U H35

## Appendix C Relevant MSFD Test Site Data and Analysis Results

Contained within this appendix is all of the information used to study the radar returns from each of the 24 MSFD test sites for which good data were available. Arranged in numerical order by test number, each packet of information contains a test summary sheet, Charge Coupled Device B&W oblique photographs (if available), a B&W down-looking aerial photo and a 10-ft contour map, both two-dimensional and three dimensional (3-D) linear scale representations of total measured power, slant range-azimuth representations of measured data and filtered data from the target feature metric exercises, range-azimuth representations of backscatter modeling results, and another site contour map with vegetation overlays. The approximate locations of targets for each test are shown as circles on the backscatter prediction results.

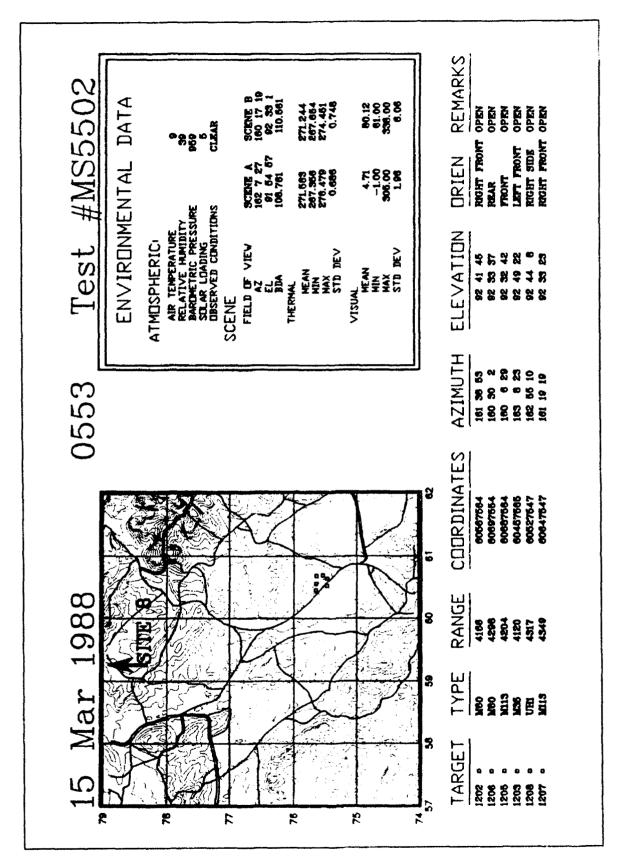


Figure C1. Surmmary data for MS5502 (Sheet 1 of 6)

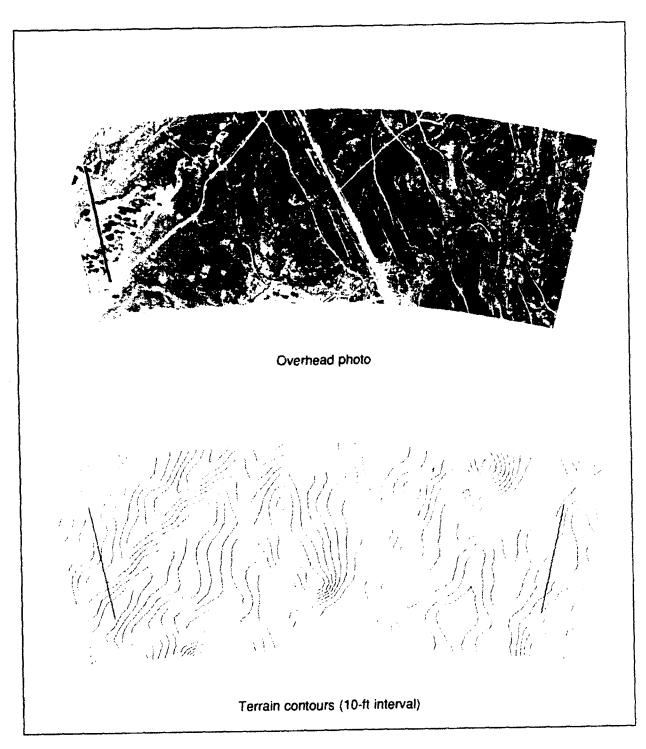
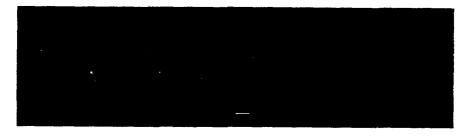


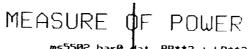
Figure C1. (Sheet 2 of 6)

MEASURE OF PLACE

MESSAR BARA PERRO LERRA



Measured data, linear scale



ms5502\_bar0 dat RR\*\*2 + LR\*\*2



3-D plot of measured data, linear scale

Figure C1. (Sheet 3 of 6)

C4

Appendix C Relevant MSFD Test Site Data and Analysis Results

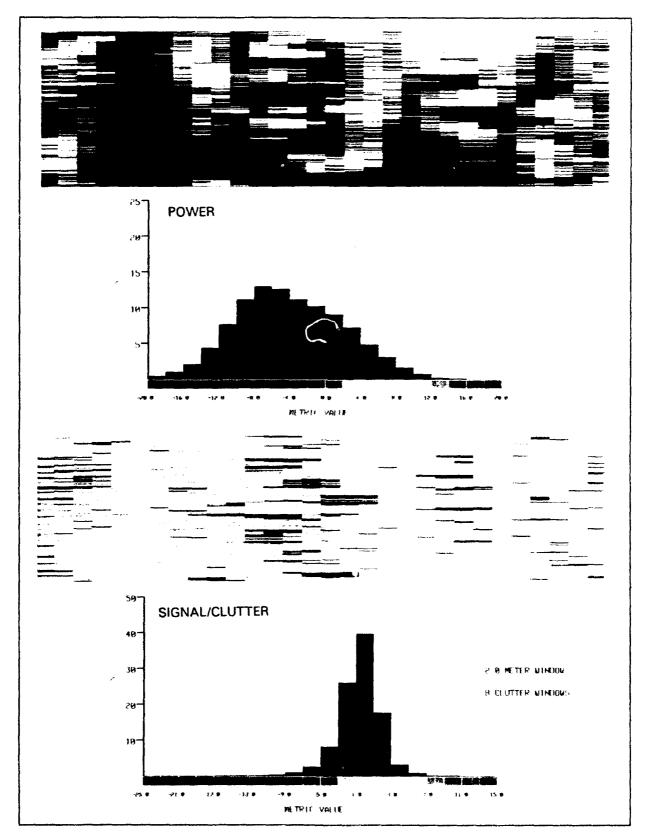


Figure C1. (Sheet 4 of 6)

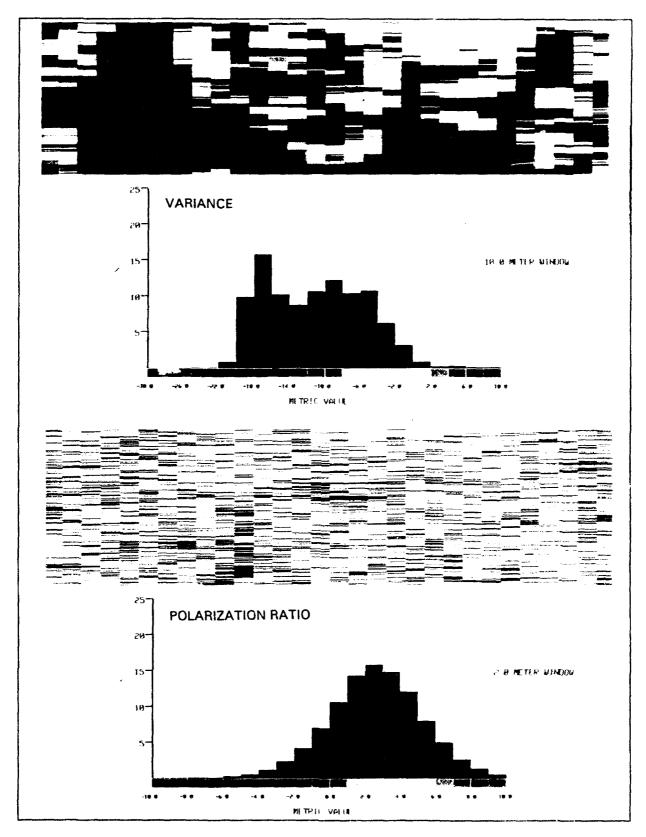


Figure C1. (Sheet 5 of 6)

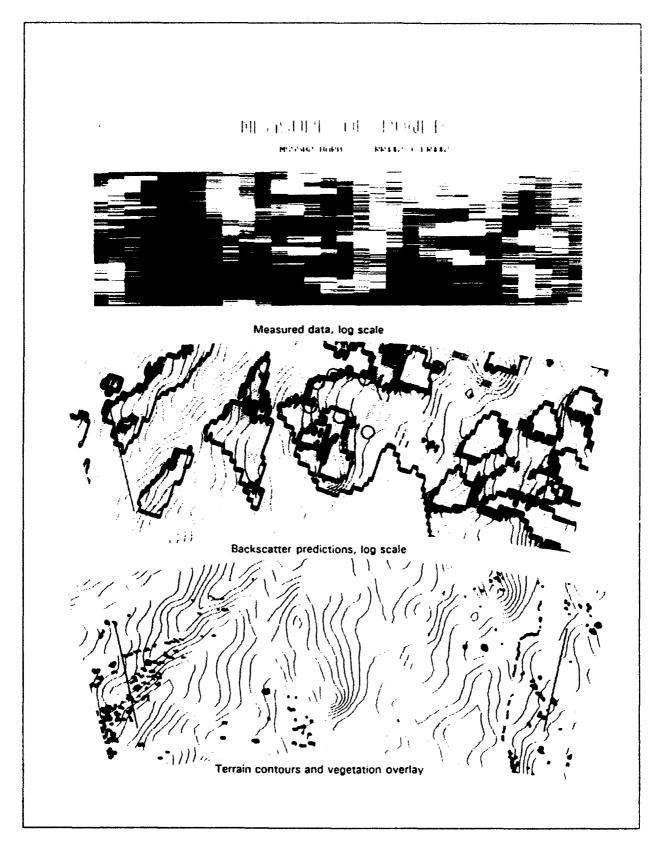


Figure C1. (Sheet 6 of 6)

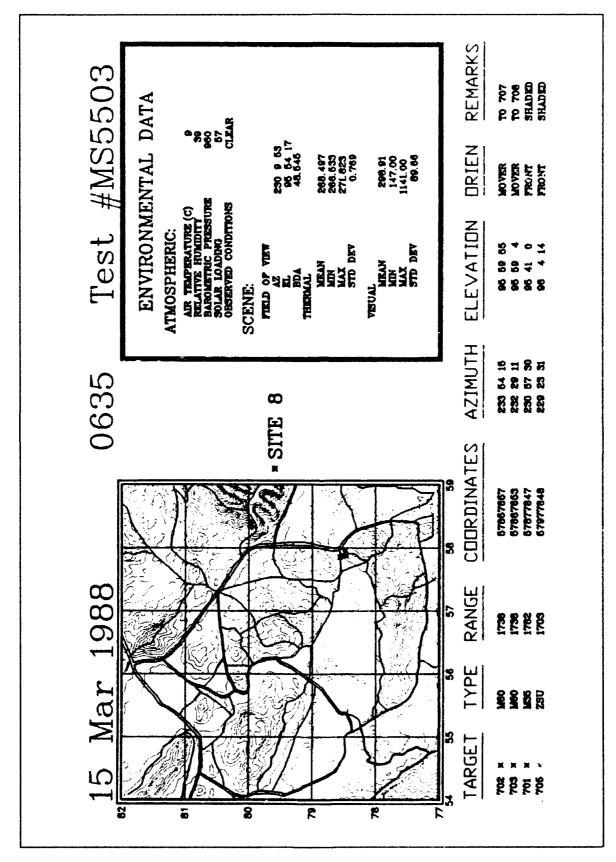


Figure C2. Summary data for MS5503 (Sheet 1 of 7)

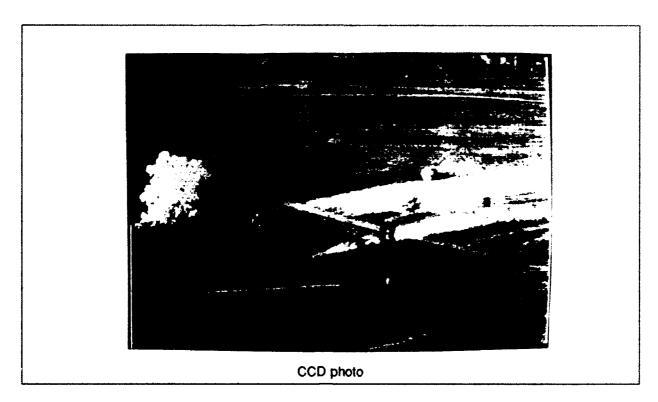


Figure C2. (Sheet 2 of 7)



Figure C2. (Sheet 3 of 7)

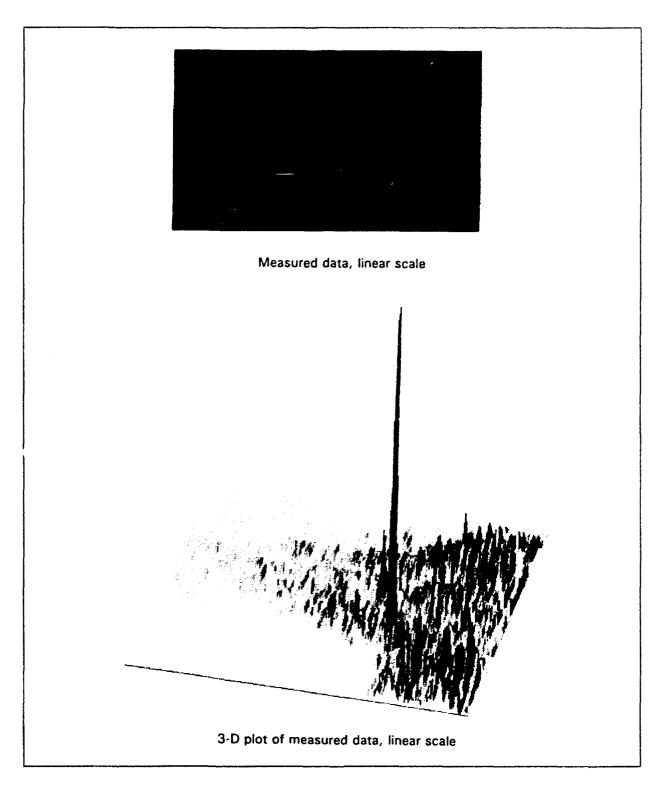


Figure C2. (Sheet 4 of 7)

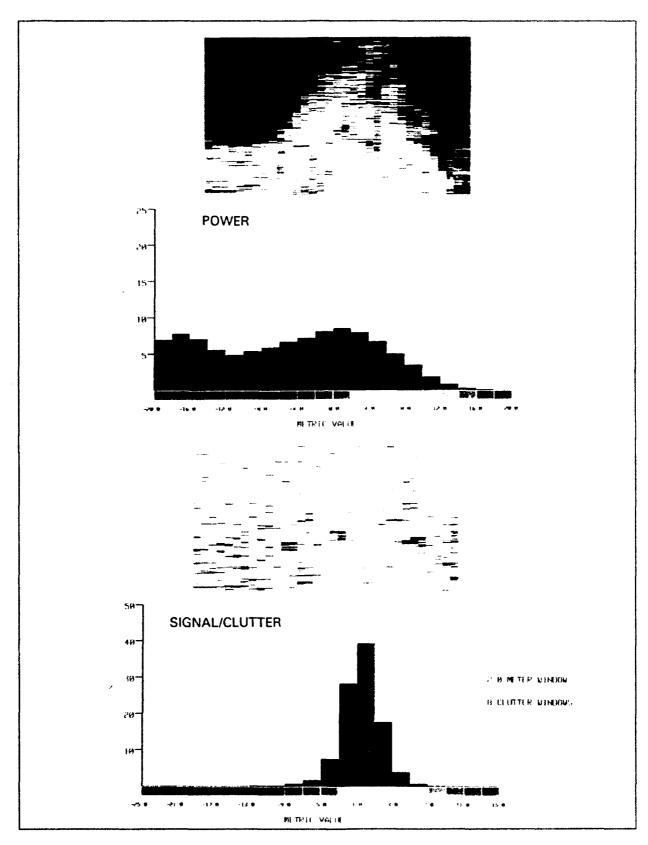


Figure C2. (Sheet 5 of 7) C12

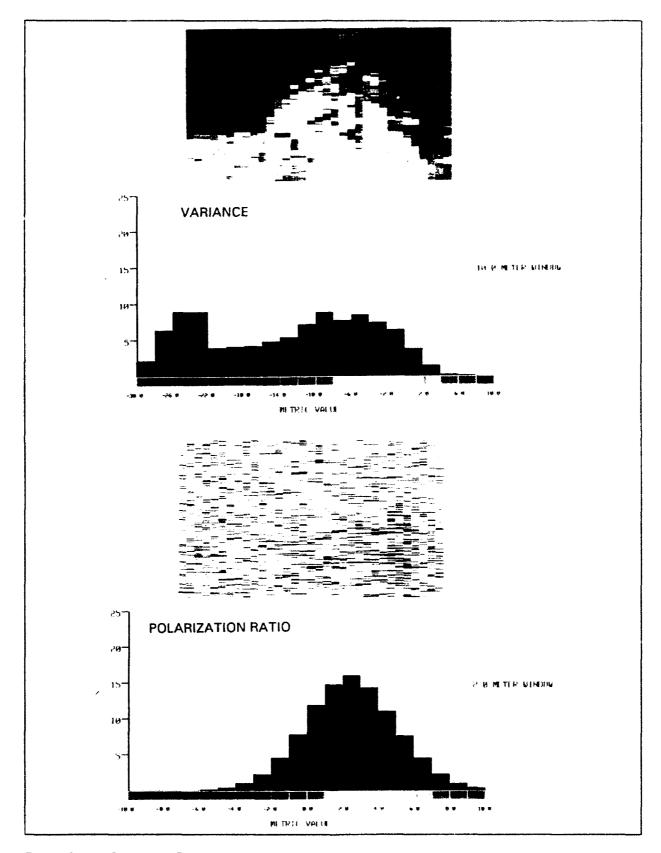
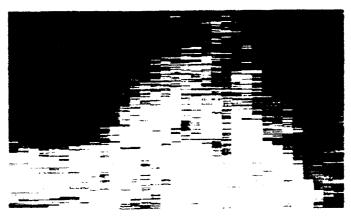


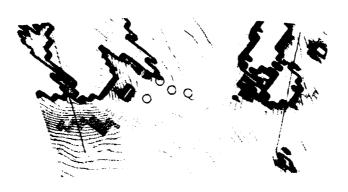
Figure C2. (Sheet 6 of 7)

## MEASURE OF POWER

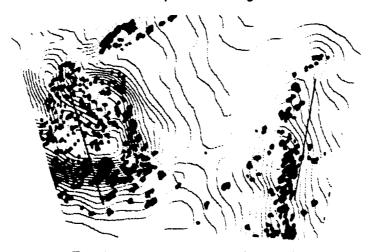
MS5503 BBR0 RR\*\*? + 1 R\*\*?



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

Figure C2. (Sheet 7 of 7)

**C14** 

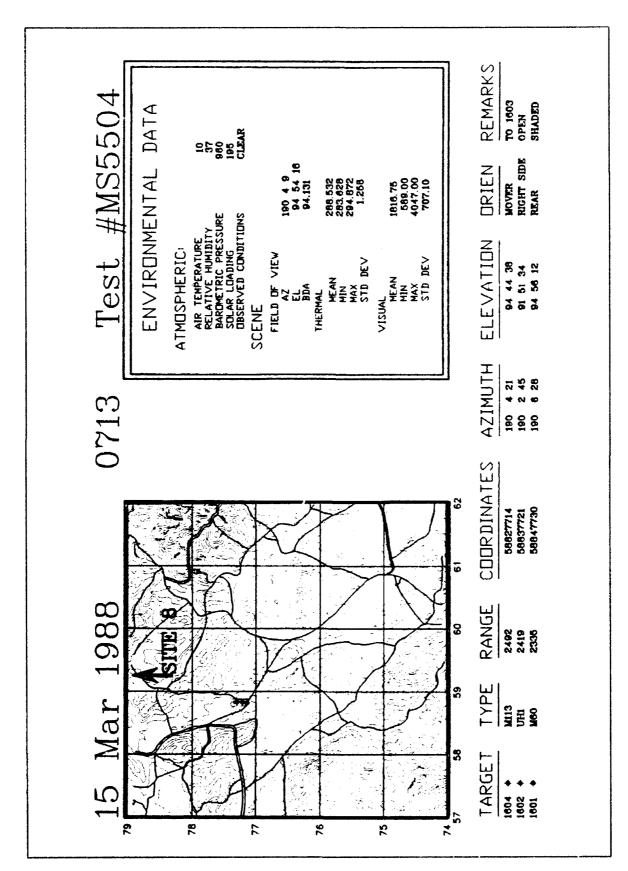


Figure C3. Summary data for MS5504 (Sheet 1 of 6)

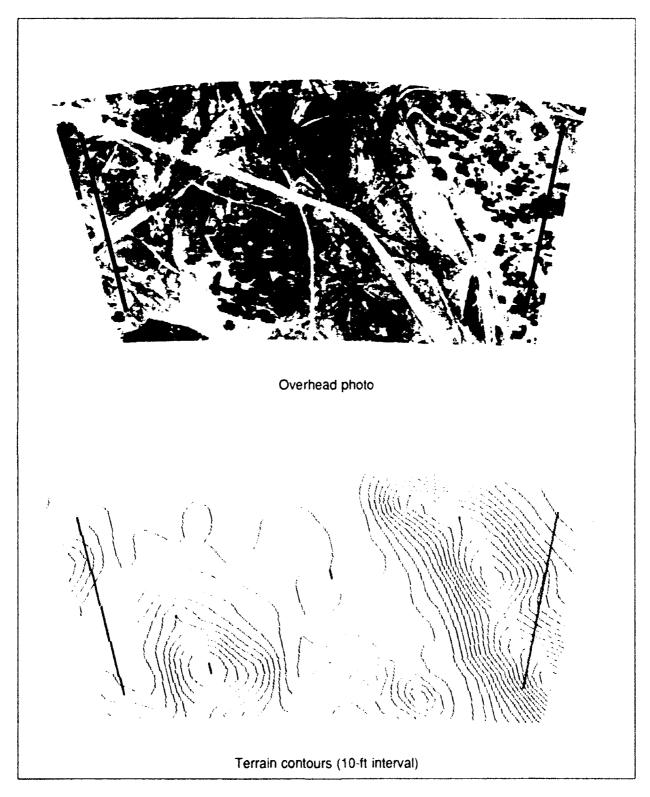


Figure C3. (Sheet 2 of 6)

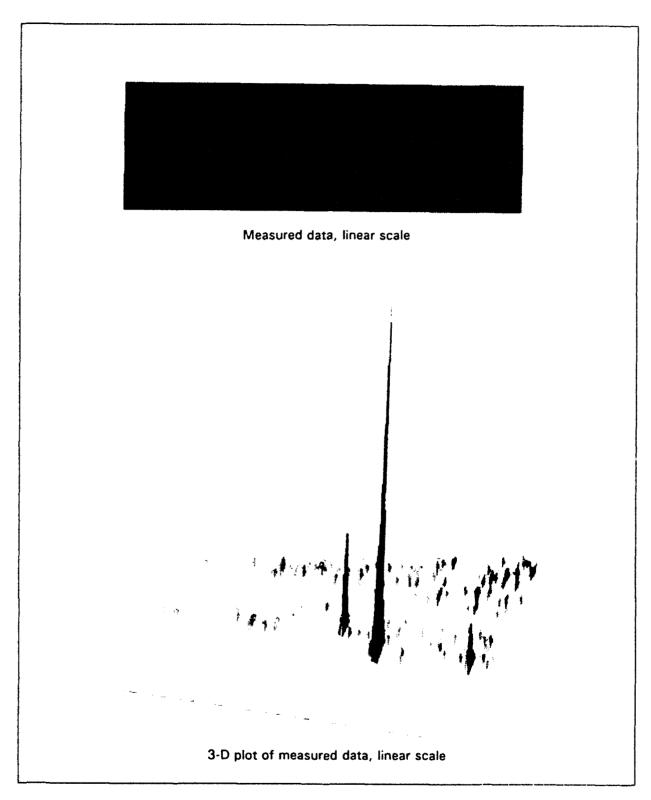


Figure C3. (Sheet 3 of 6)

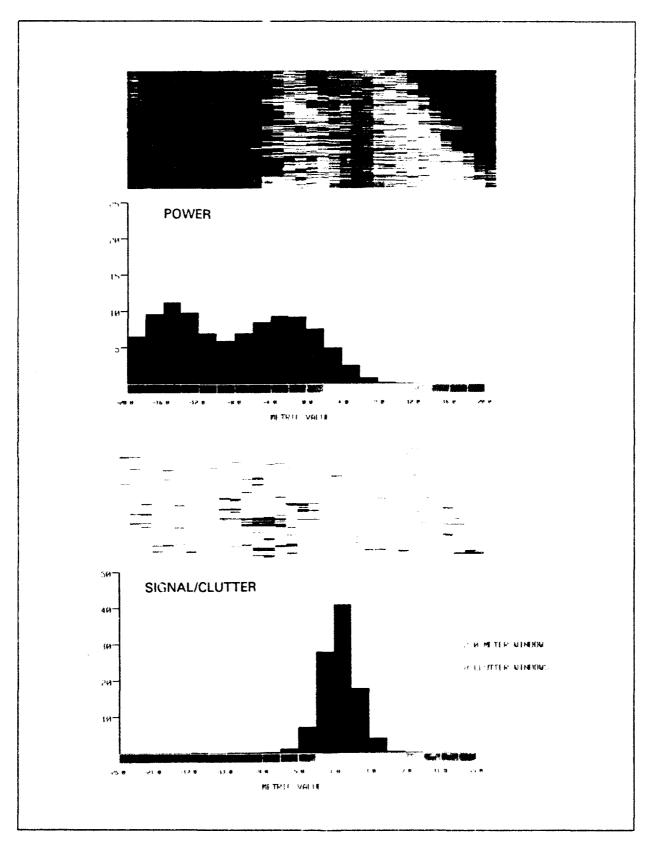


Figure C3. (Sheet 4 of 6) C18

Appendix C Relevant MSFD Test Site Data and Analysis Results

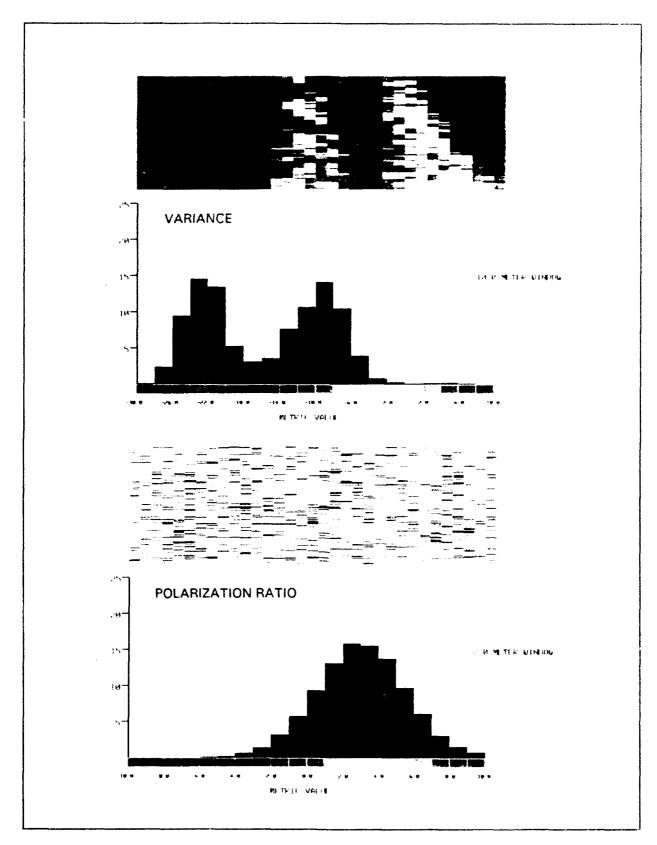


Figure C3. (Sheet 5 of 6)

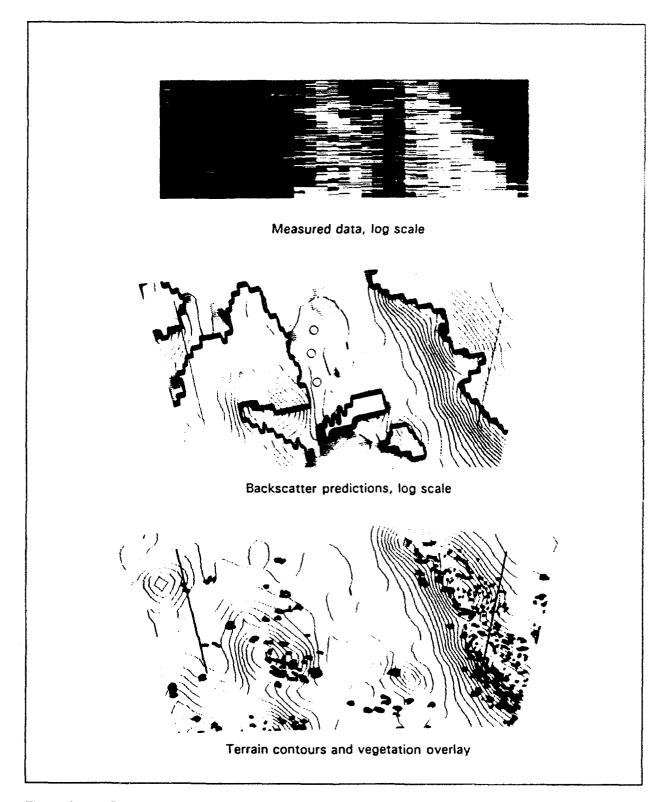


Figure C3. (Sheet 6 of 6)

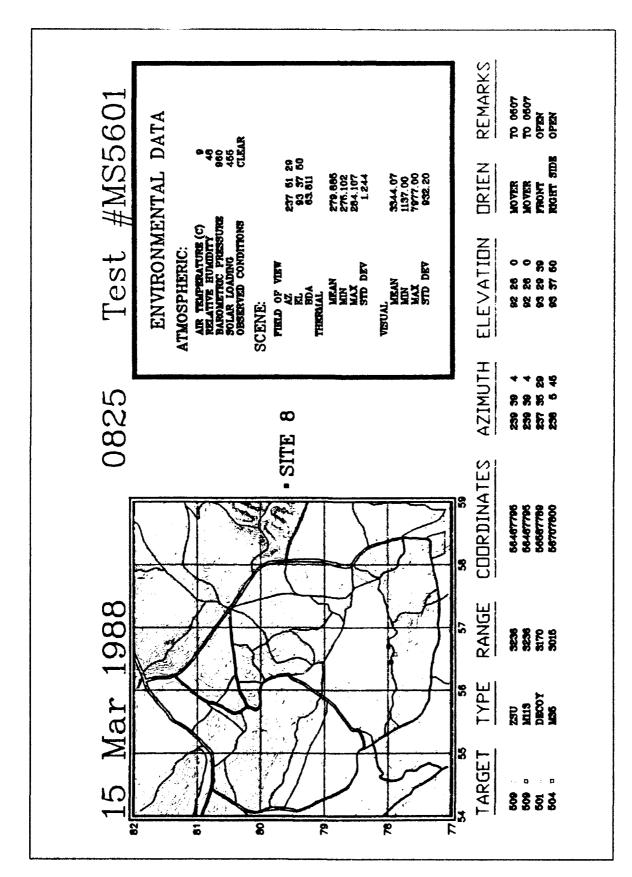


Figure C4. Summary data for MS5601 (Sheet 1 of 7)

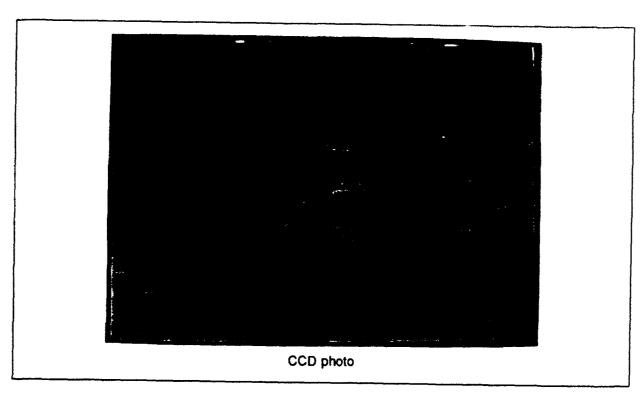


Figure C4. (Sheet 2 of 7)

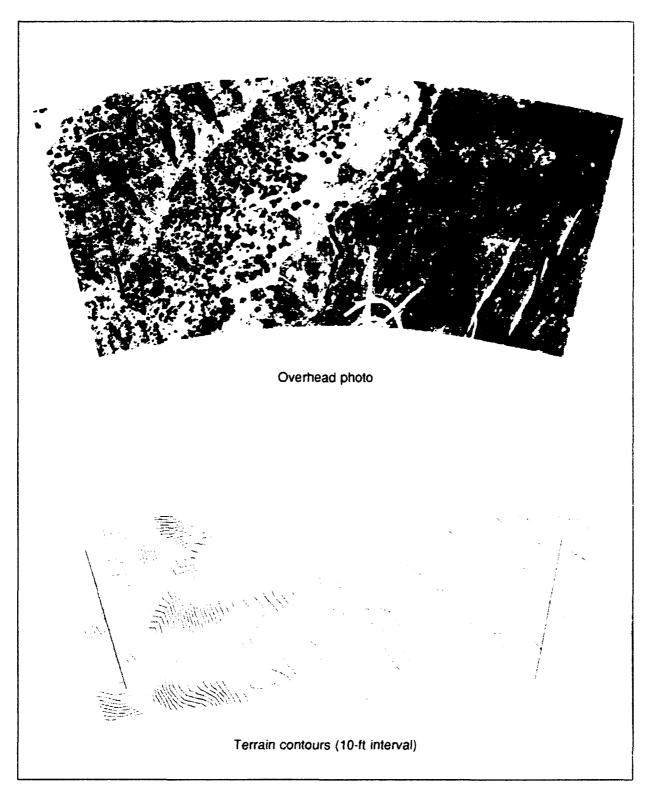


Figure C4. (Sheet 3 of 7)

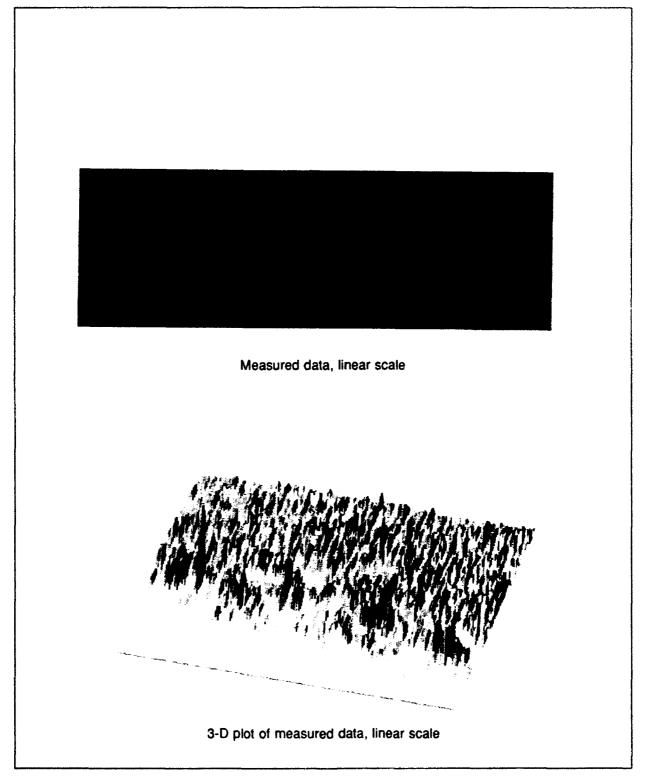


Figure C4. (Sheet 4 of 7)

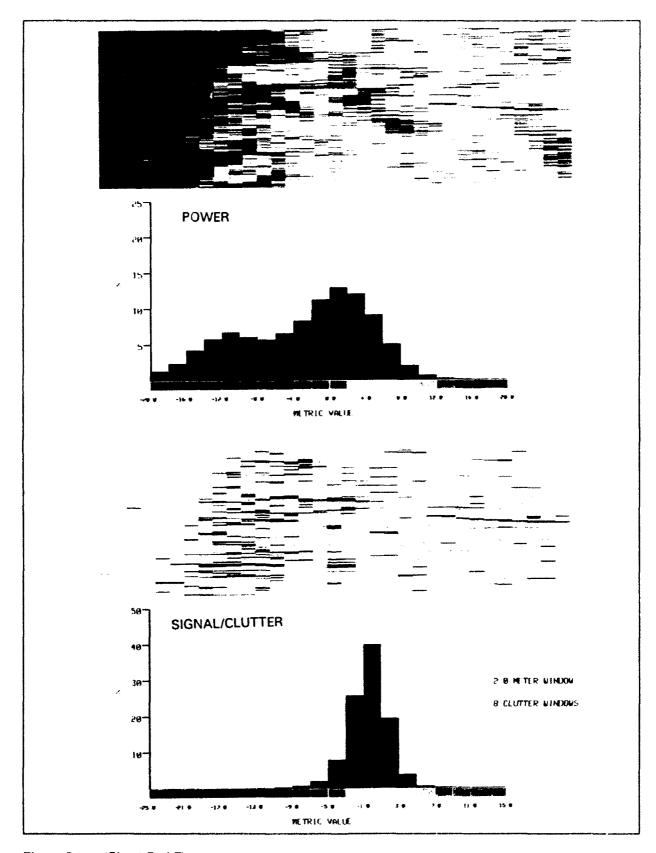


Figure C4. (Sheet 5 of 7)

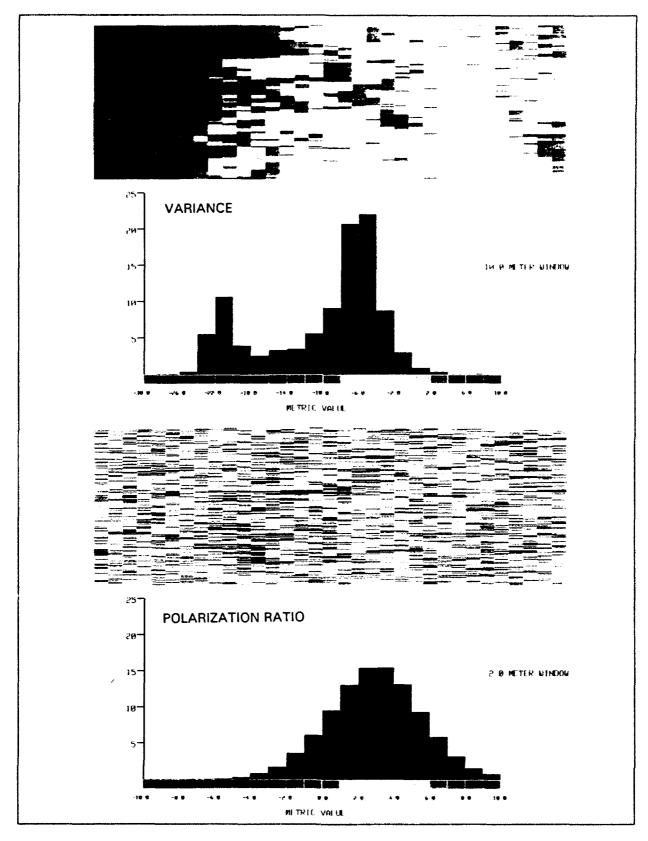


Figure C4. (Sheet 6 of 7) C26

Appendix C Relevant MSFD Test Site Data and Analysis Results

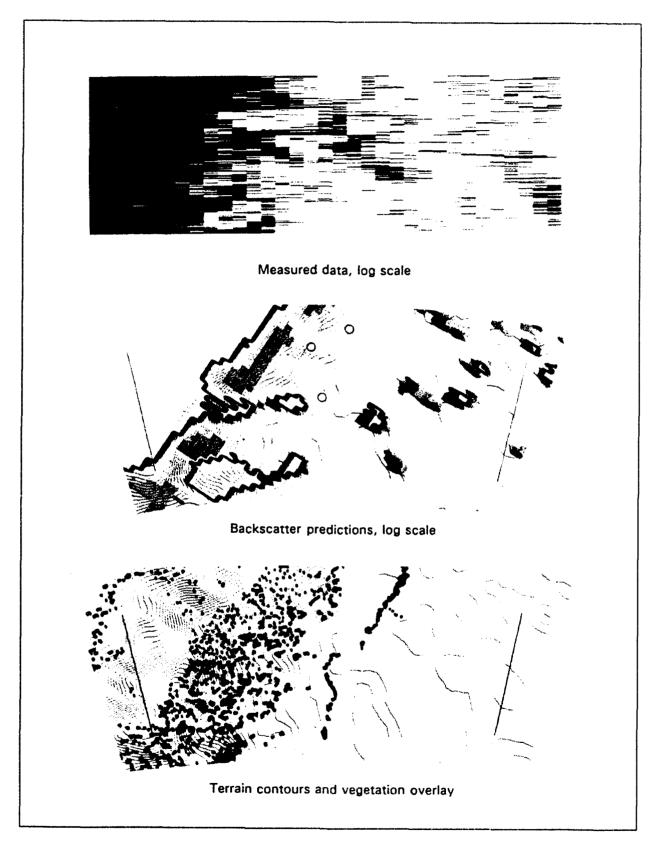


Figure C4. (Sheet 7 of 7)

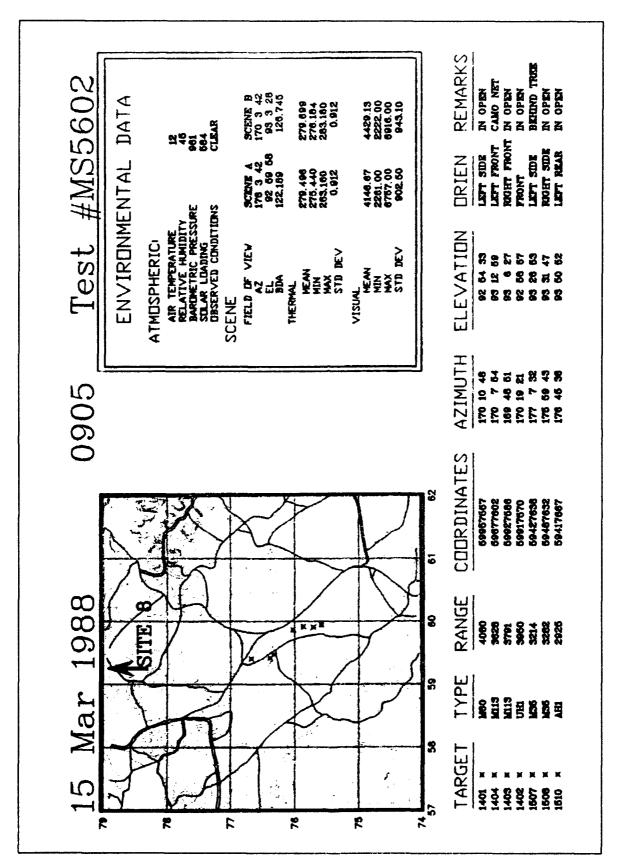


Figure C5. Summary data for MS5602 (Sheet 1 of 7)

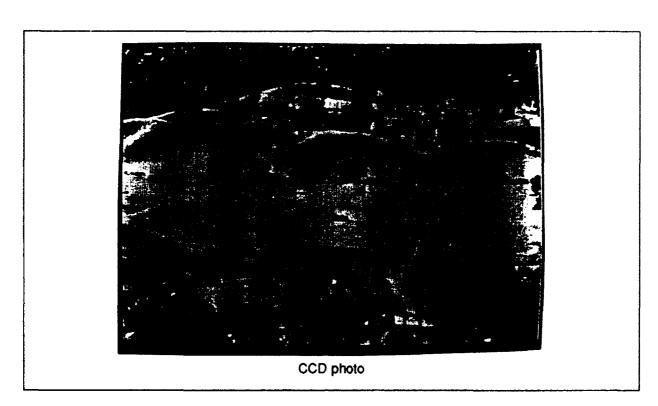


Figure C5. (Sheet 2 of 7)

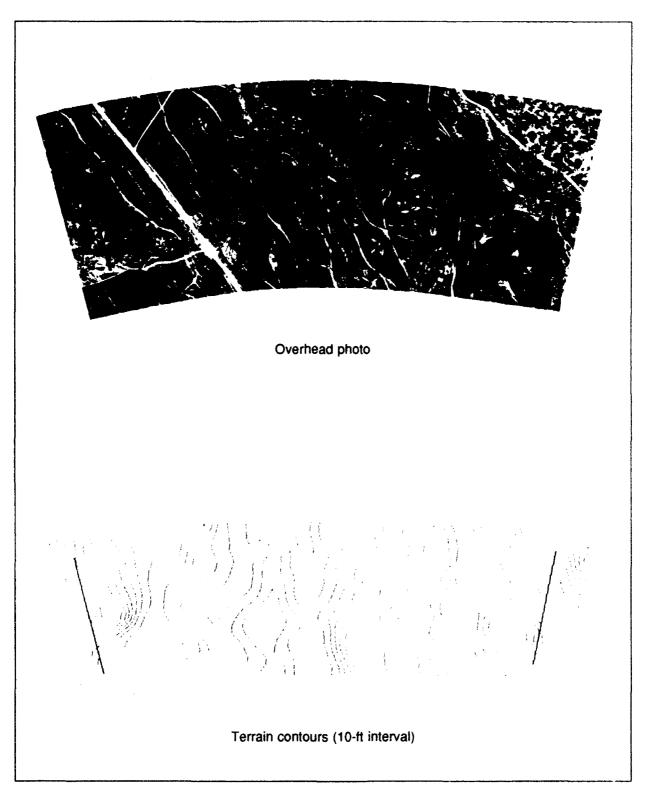


Figure C5. (Sheet 3 of 7)

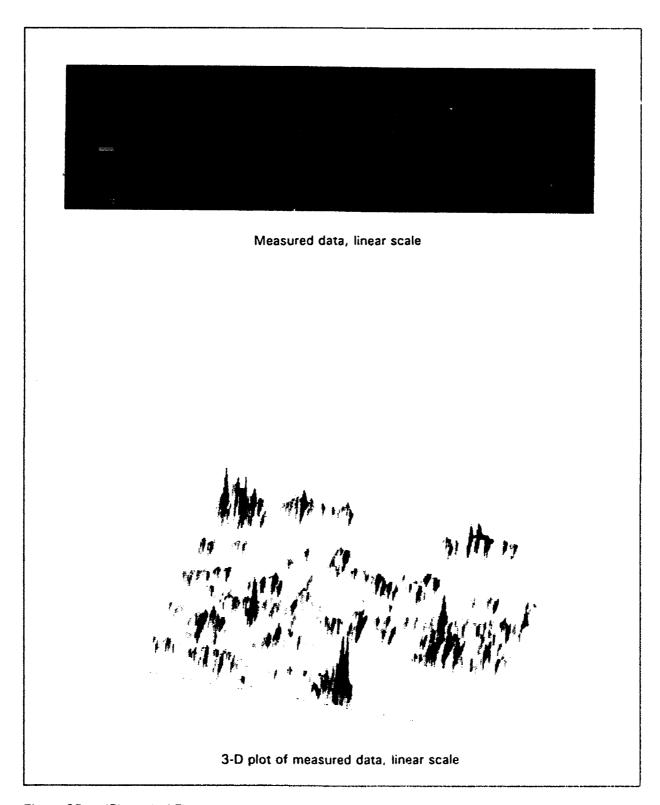


Figure C5. (Sheet 4 of 7)

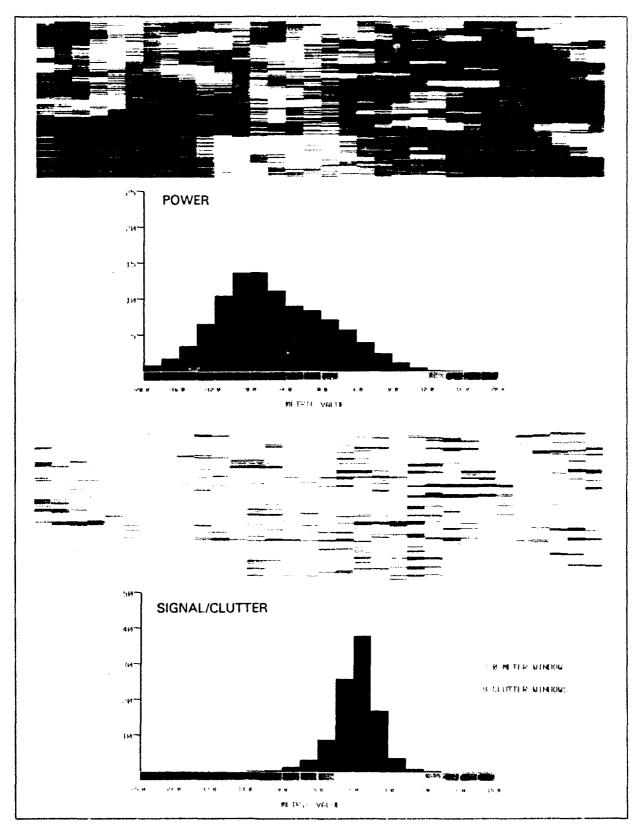


Figure C5. (Sheet 5 of 7)

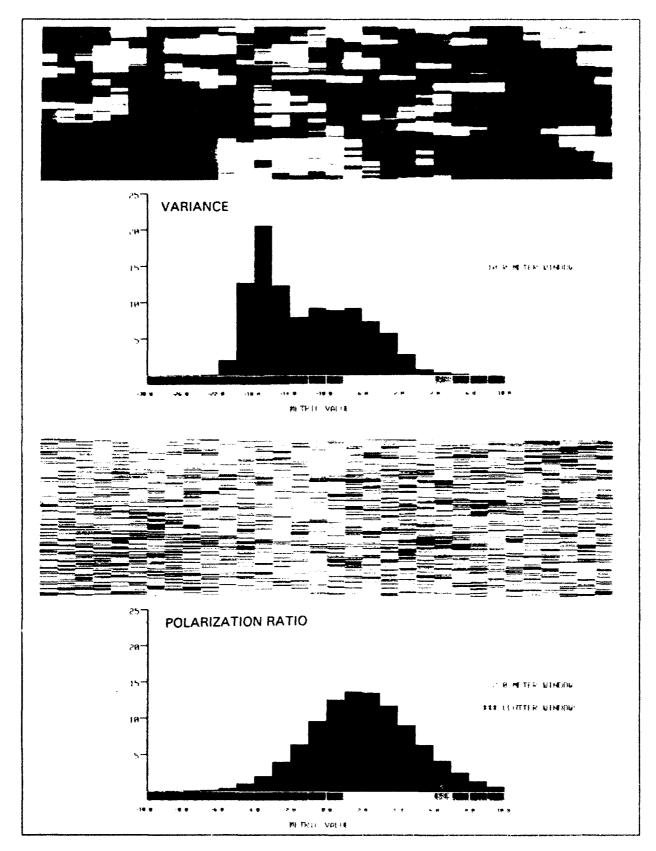


Figure C5. (Sheet 6 of 7)

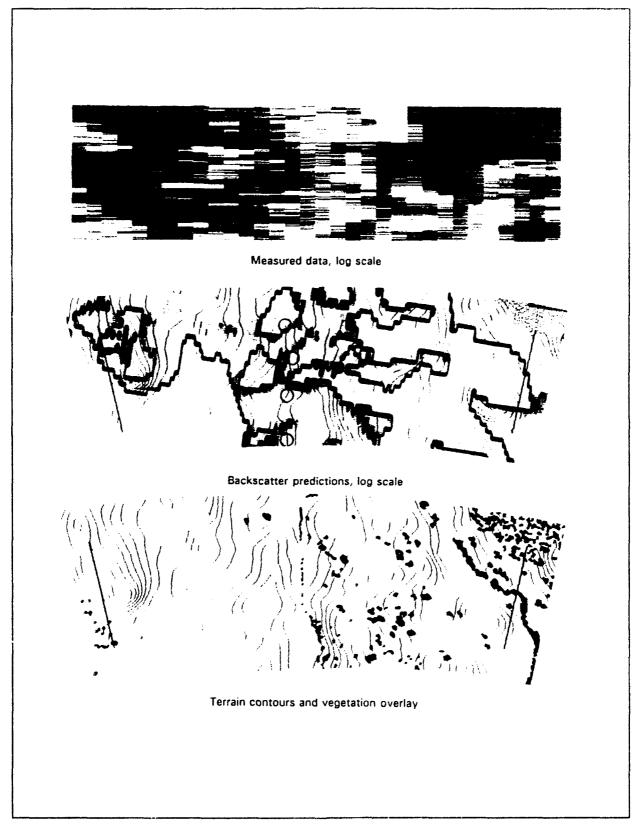


Figure C5. (Sheet 7 of 7)

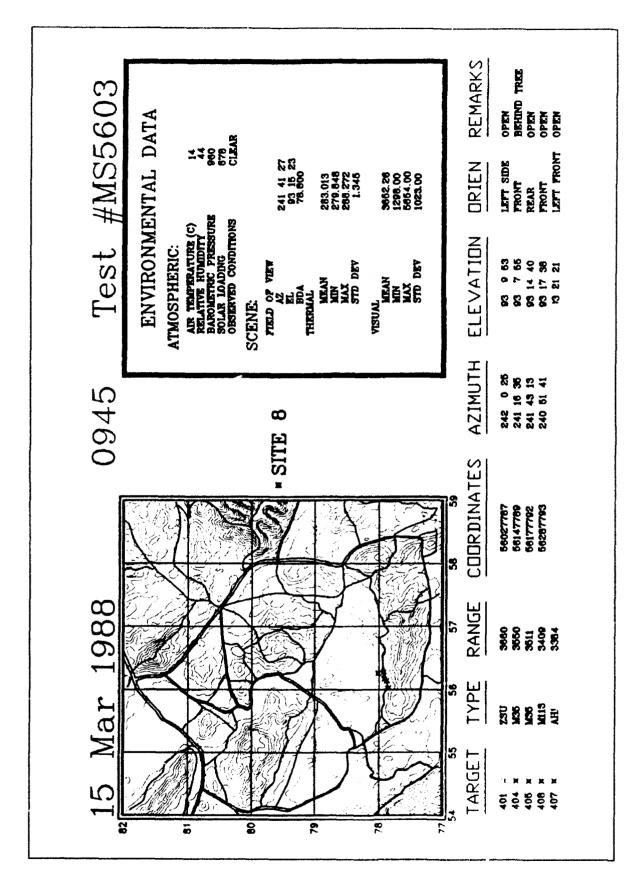


Figure C6. Summary data for MS5603 (Sheet 1 of 7)

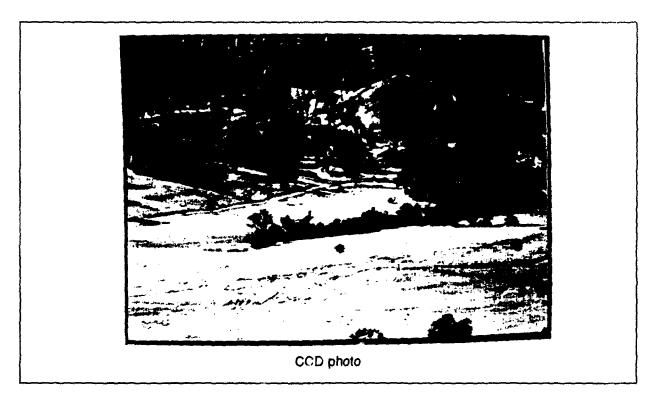


Figure C6. (Sheet 2 of 7)

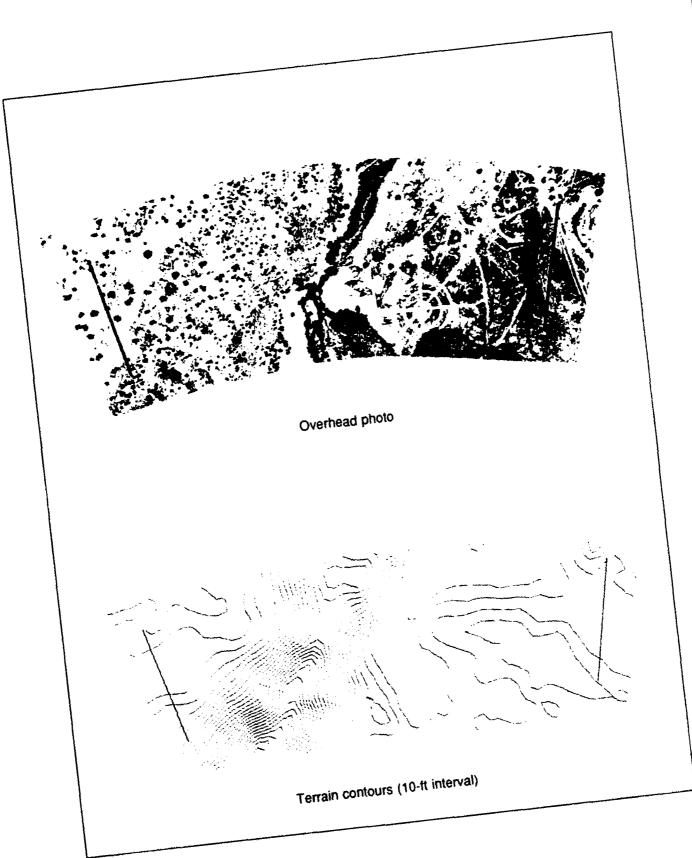


Figure C6. (Sheet 3 of 7)

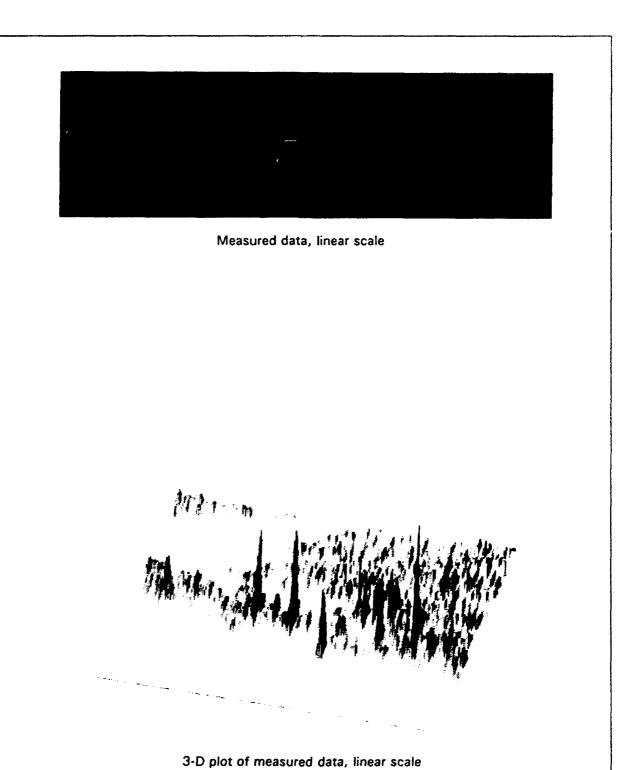


Figure C6. (Sheet 4 of 7)

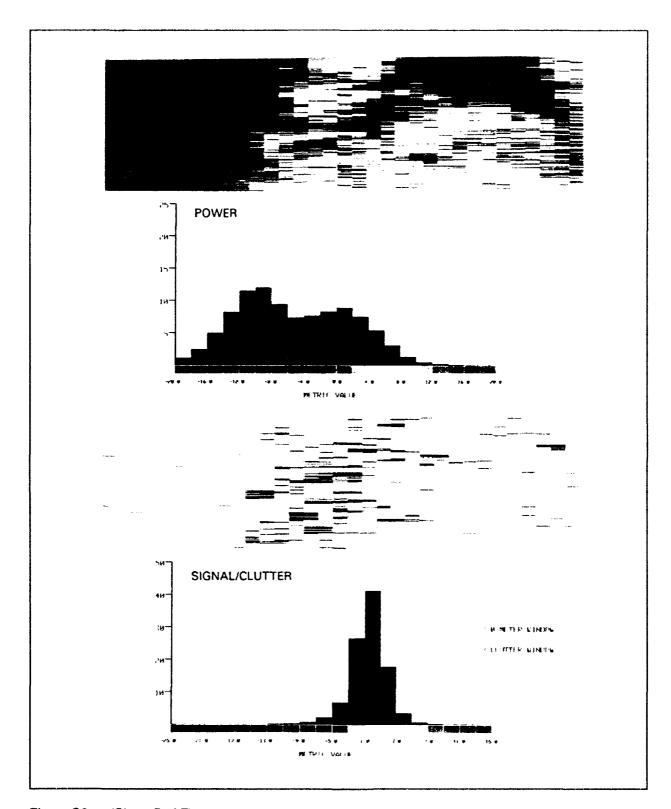


Figure C6. (Sheet 5 of 7)

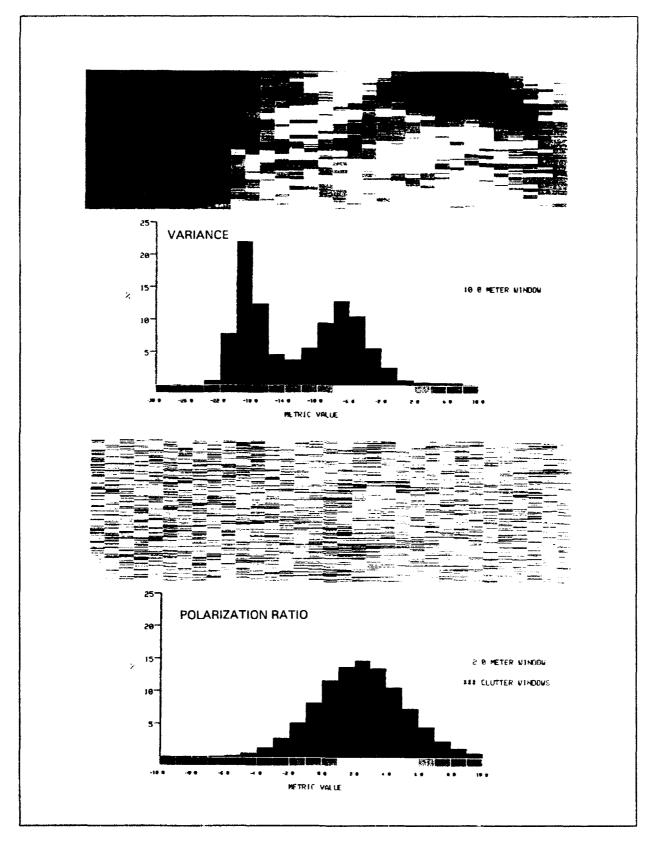


Figure C6. (Sheet 6 of 7) C40

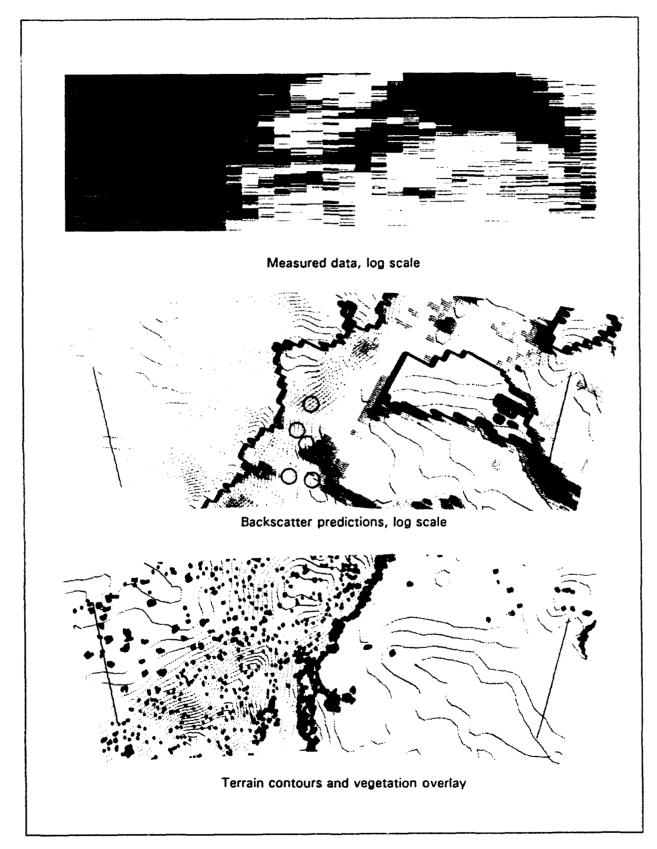


Figure C6. (Sheet 7 of 7)

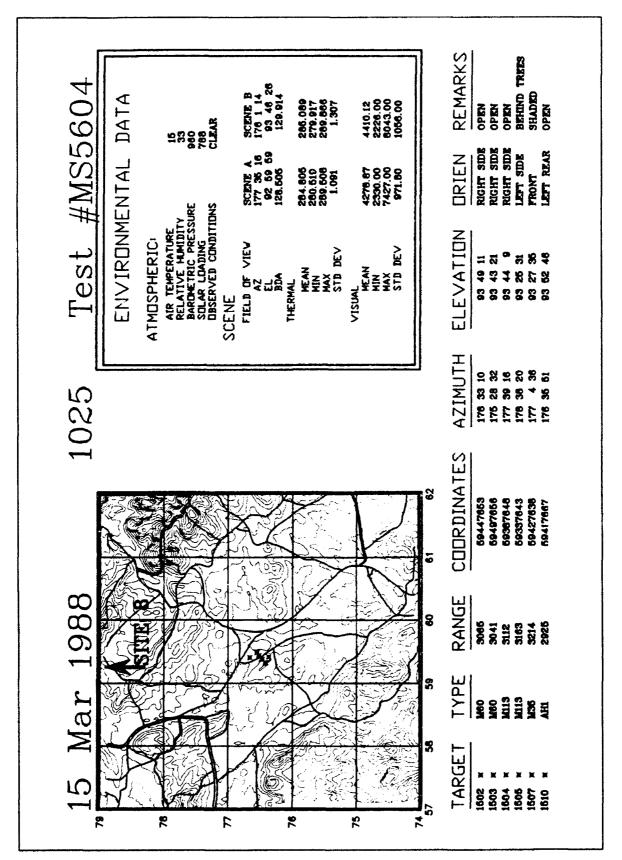


Figure C7. Summary data for MS5604 (Sheet 1 of 7)

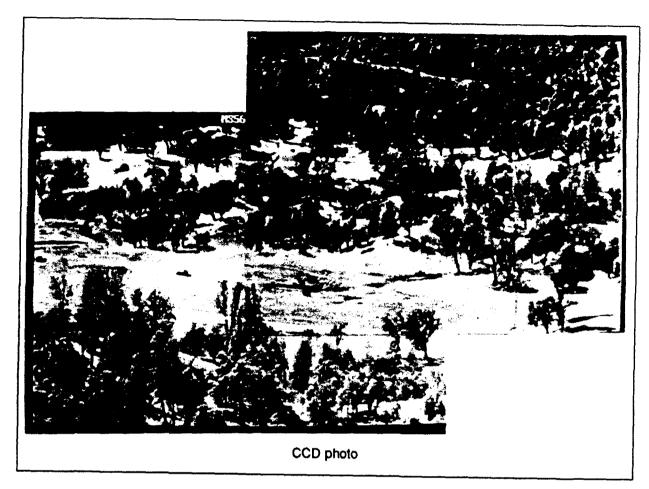


Figure C7. (Sheet 2 of 7)



Figure C7. (Sheet 3 of 7)

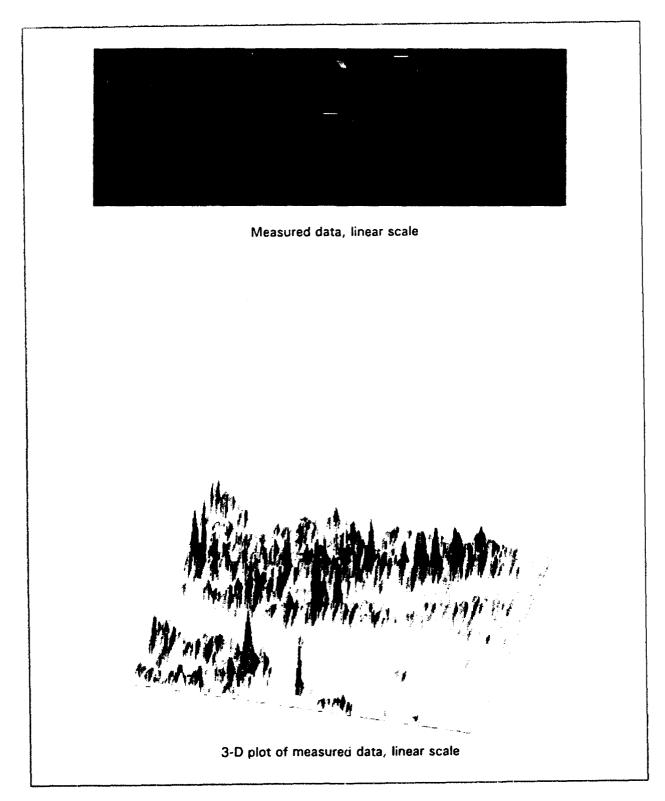


Figure C7. (Sheet 4 of 7)

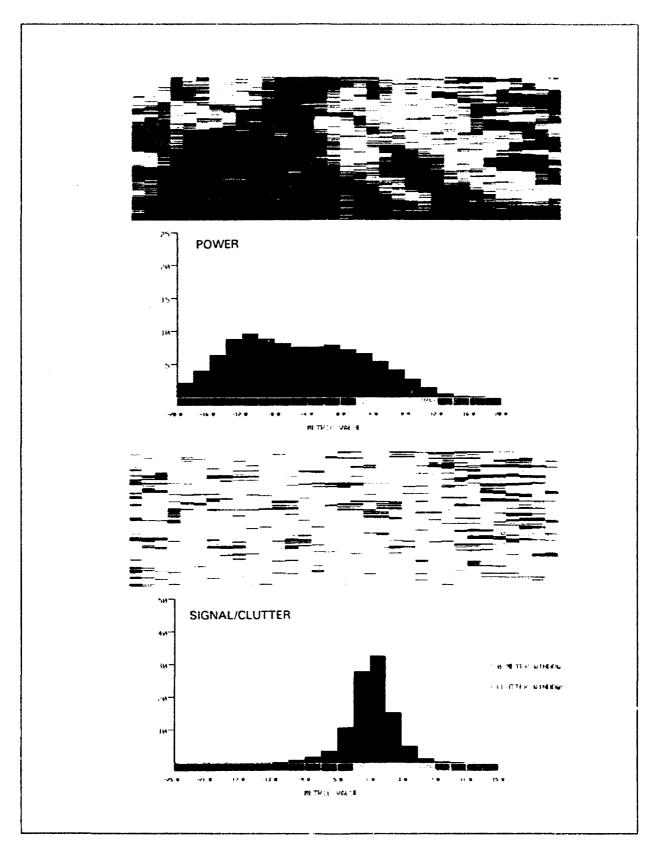


Figure C7. (Sheet 5 of 7)

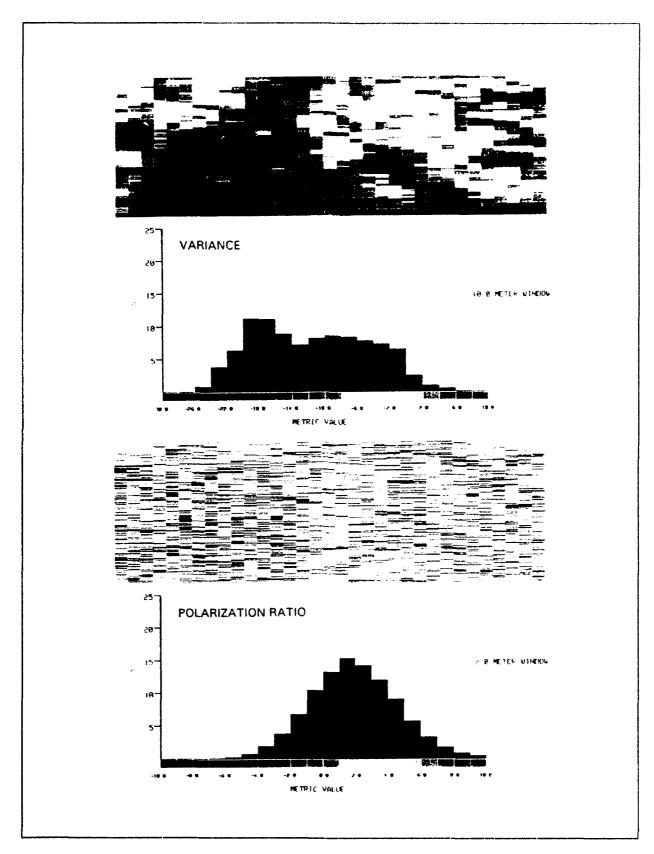


Figure C7. (Sheet 6 of 7)

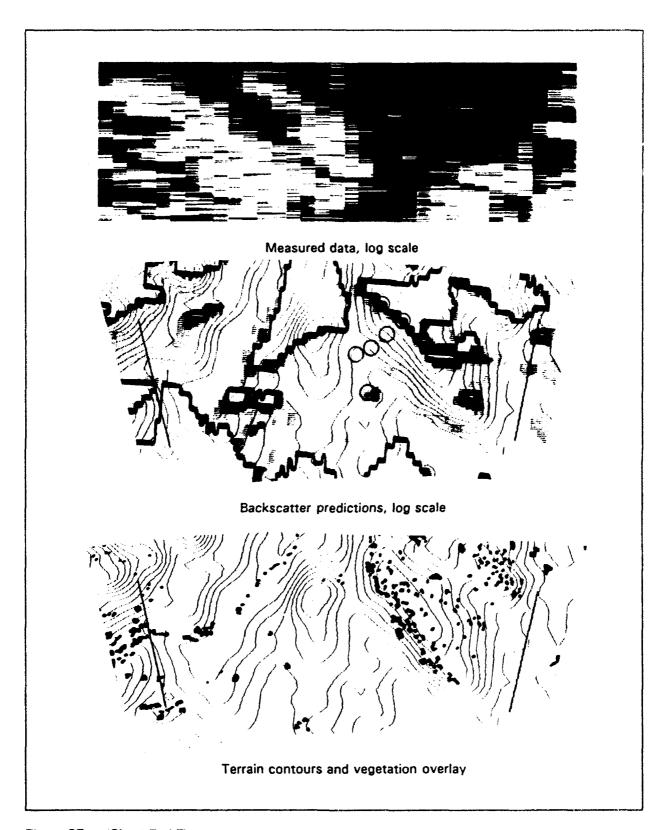


Figure C7. (Sheet 7 of 7)

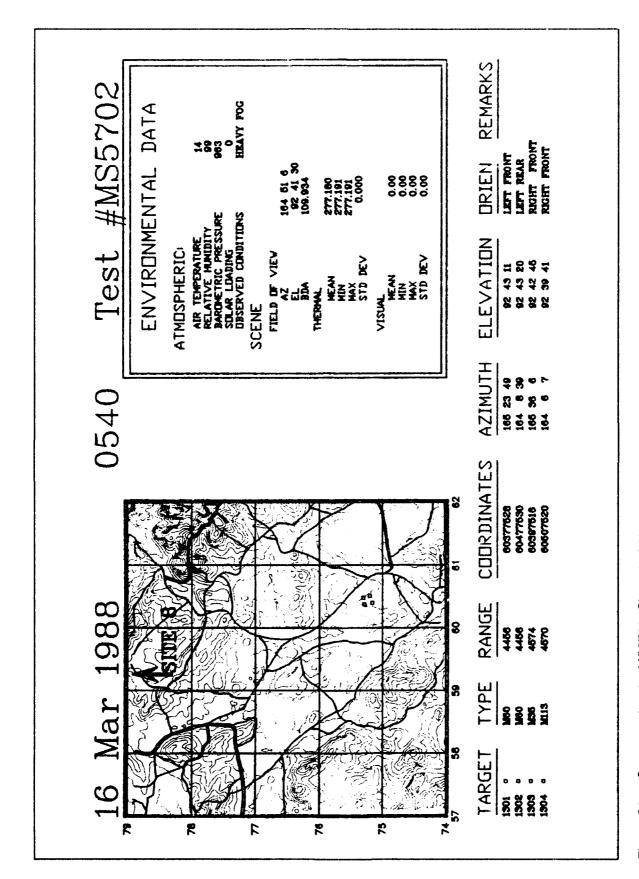


Figure C8. Summary data for MS5702 (Sheet 1 of 6)

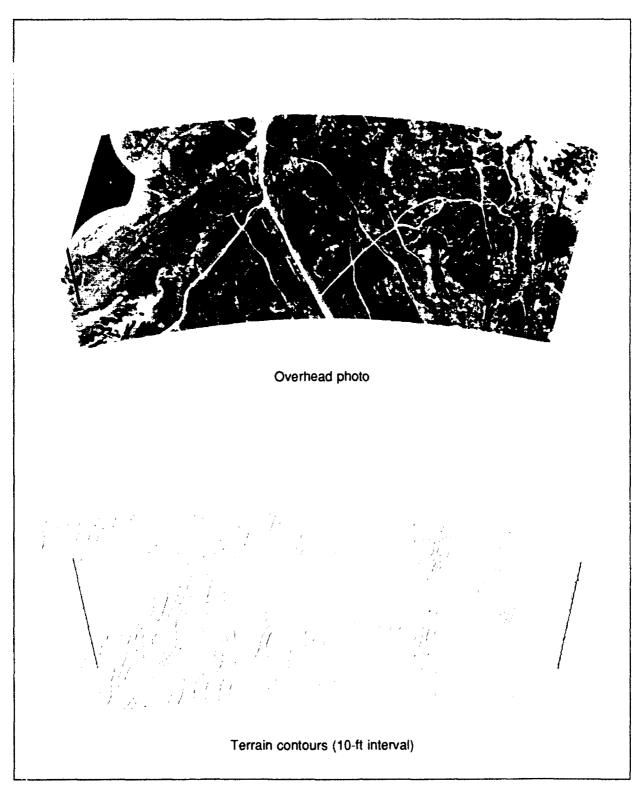


Figure C8. (Sheet 2 of 6)

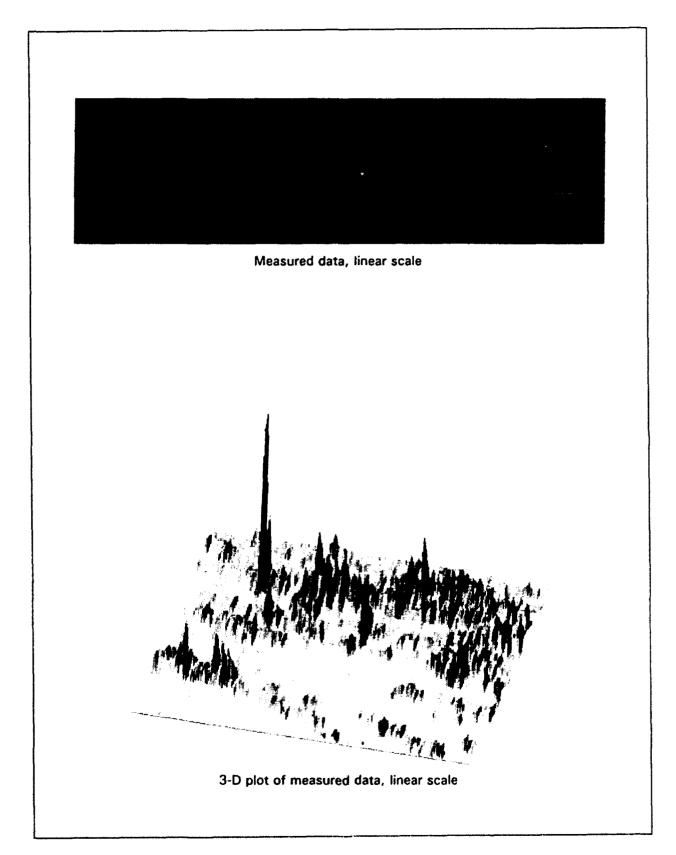


Figure C8. (Sheet 3 of 6)

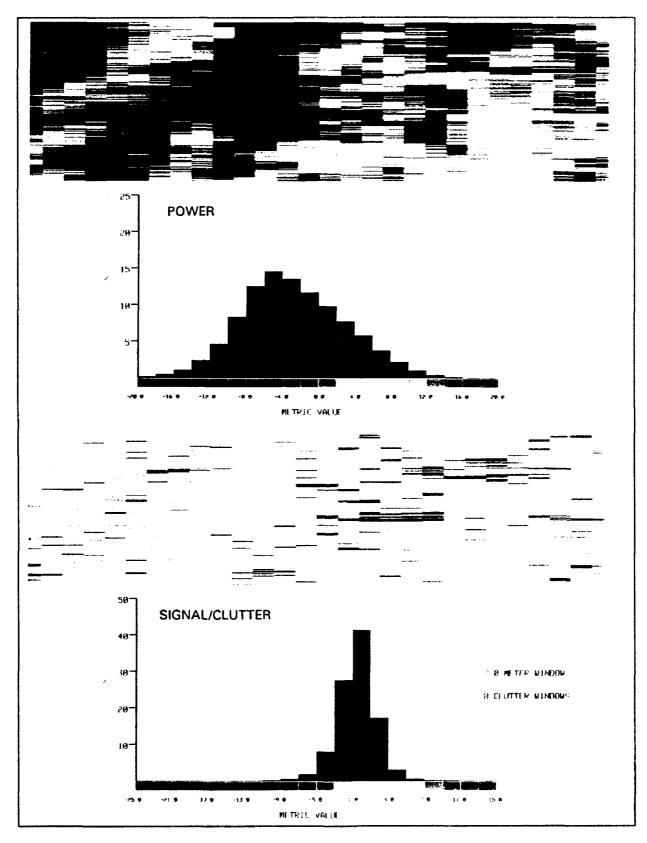


Figure C8. (Sheet 4 of 6)

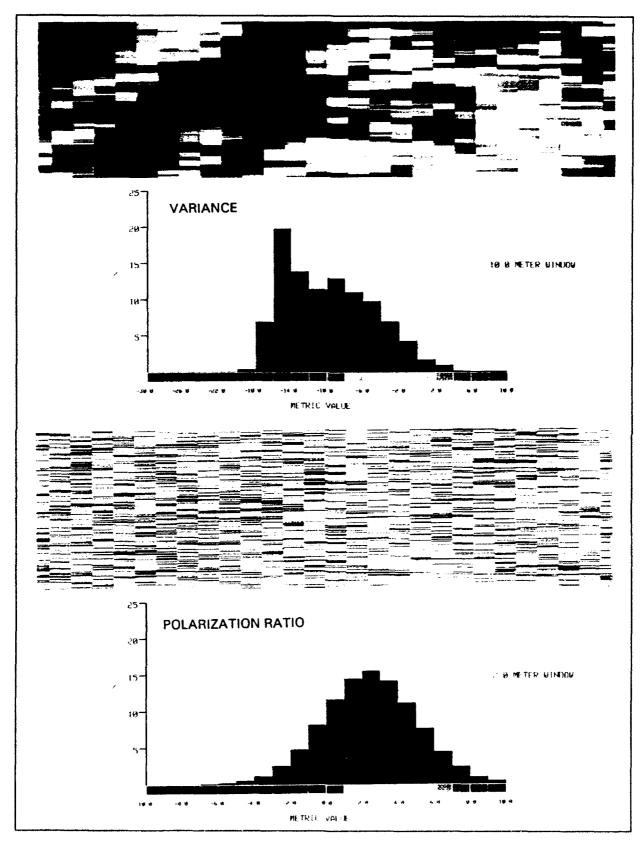


Figure C8. (Sheet 5 of 6)

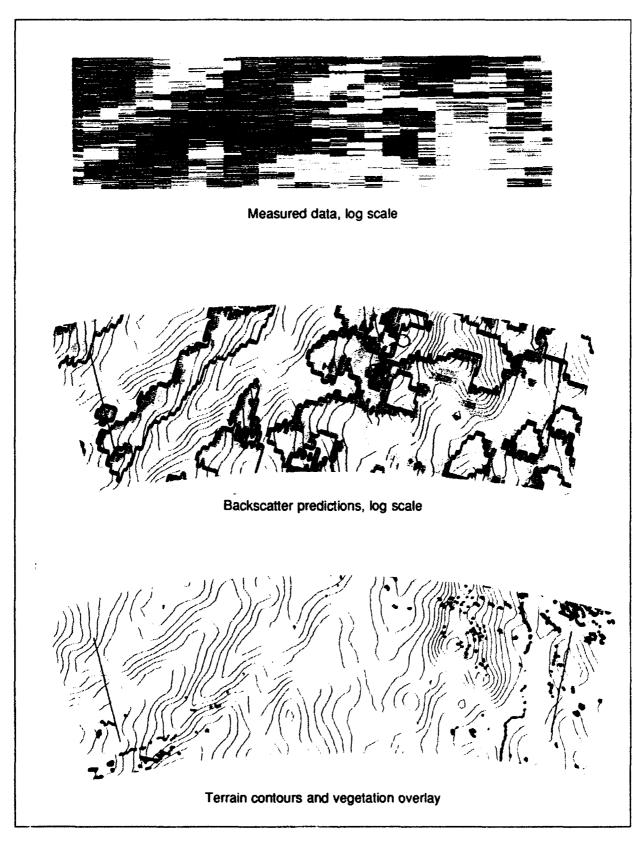


Figure C8. (Sheet 6 of 6)

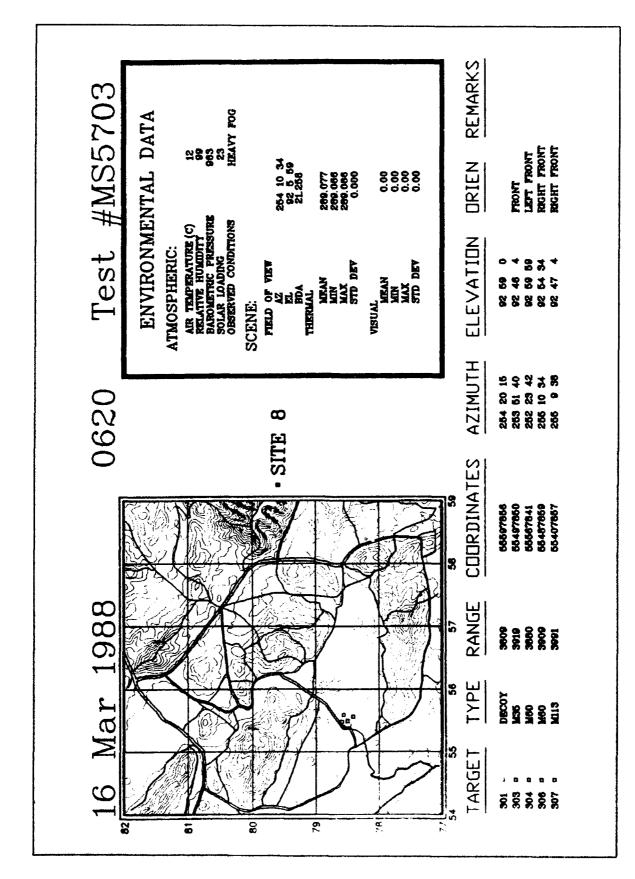


Figure C9. Summary data for MS5703 (Sheet 1 of 6)

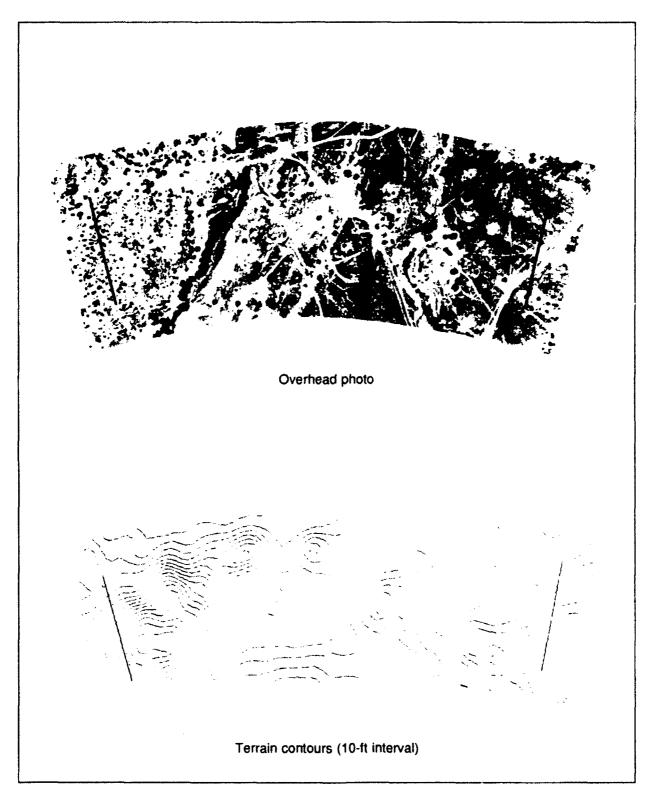


Figure C9. (Sheet 2 of 6)

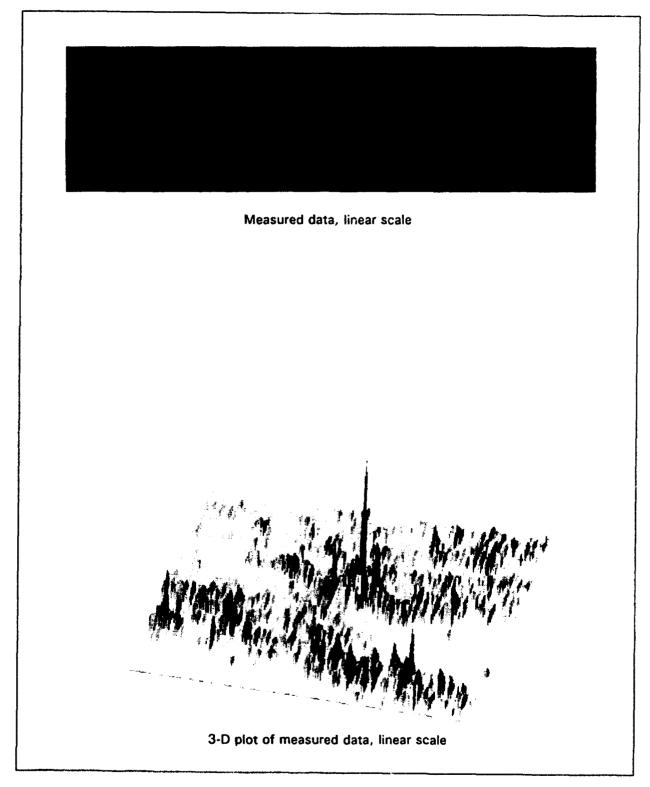


Figure C9. (Sheet 3 of 6)

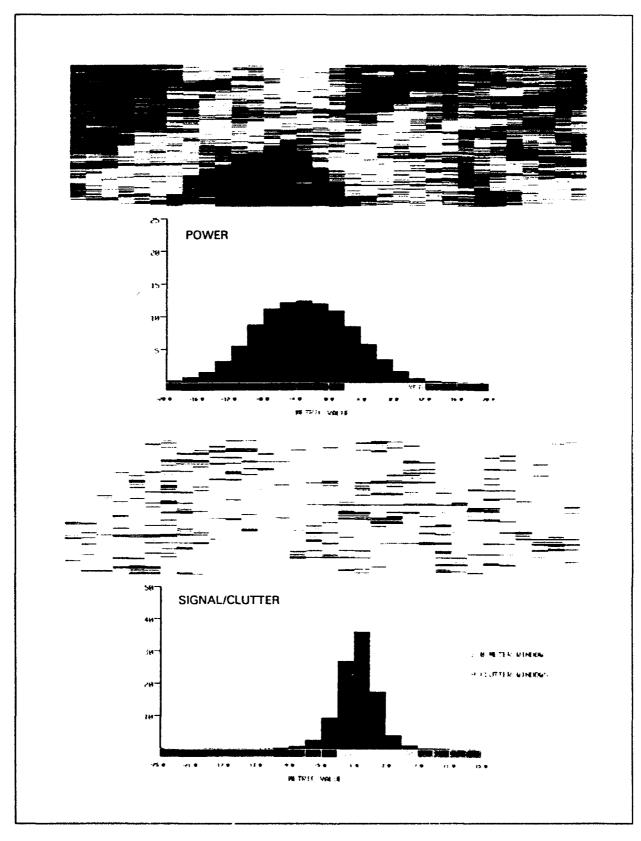


Figure C9. (Sheet 4 of 6)

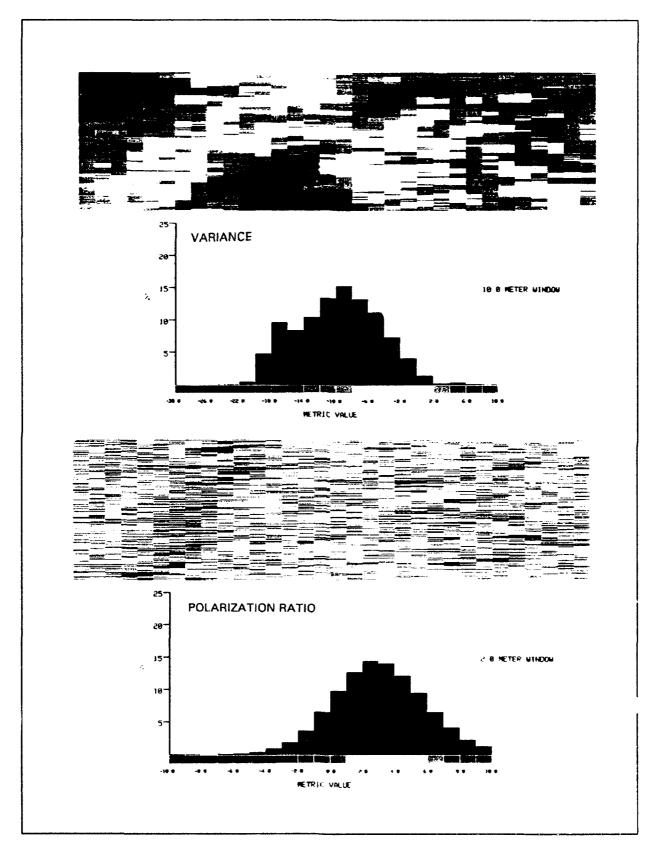


Figure C9. (Sheet 5 of 6)

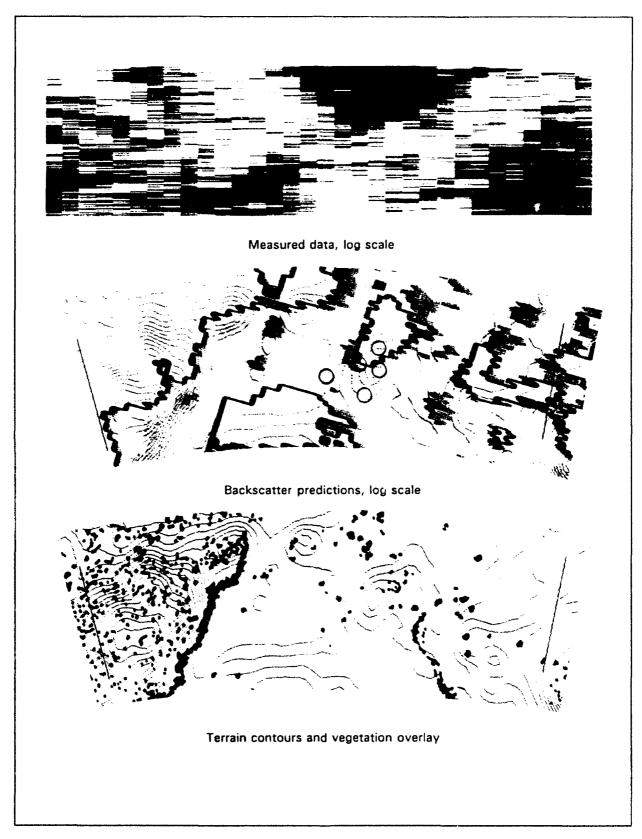


Figure C9. (Sheet 6 of 6)

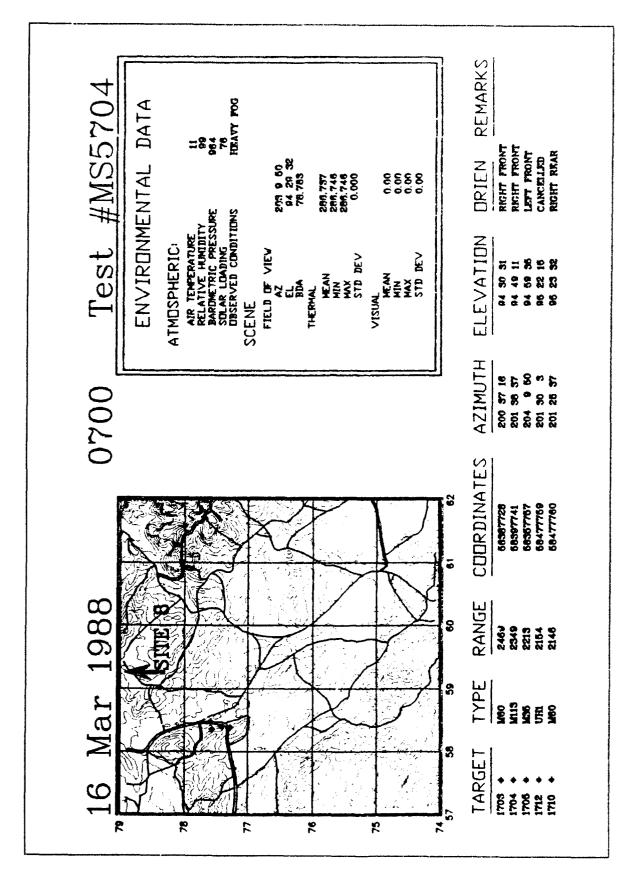


Figure C10. Summary data for MS5704 (Sheet 1 of 6)

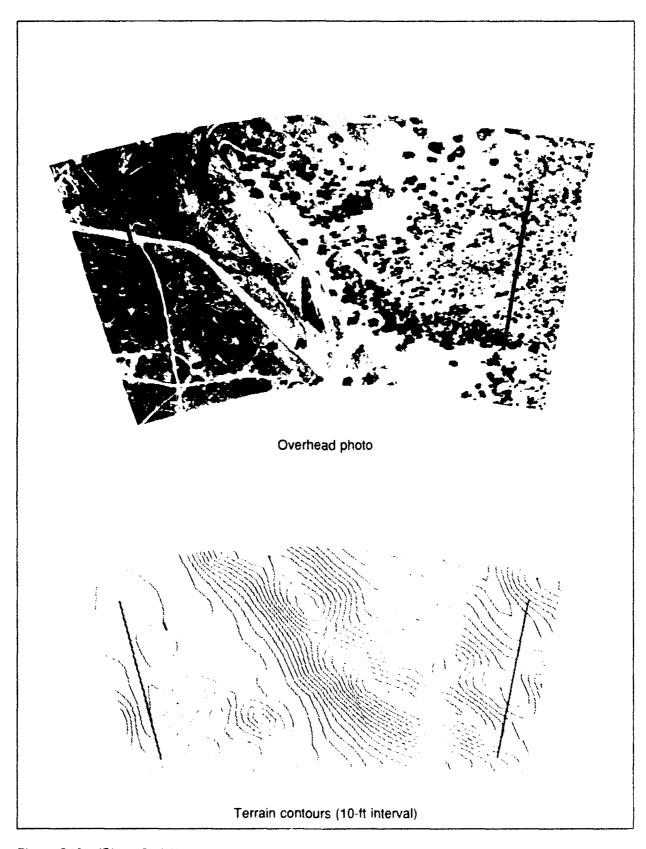


Figure C10. (Sheet 2 of 6)

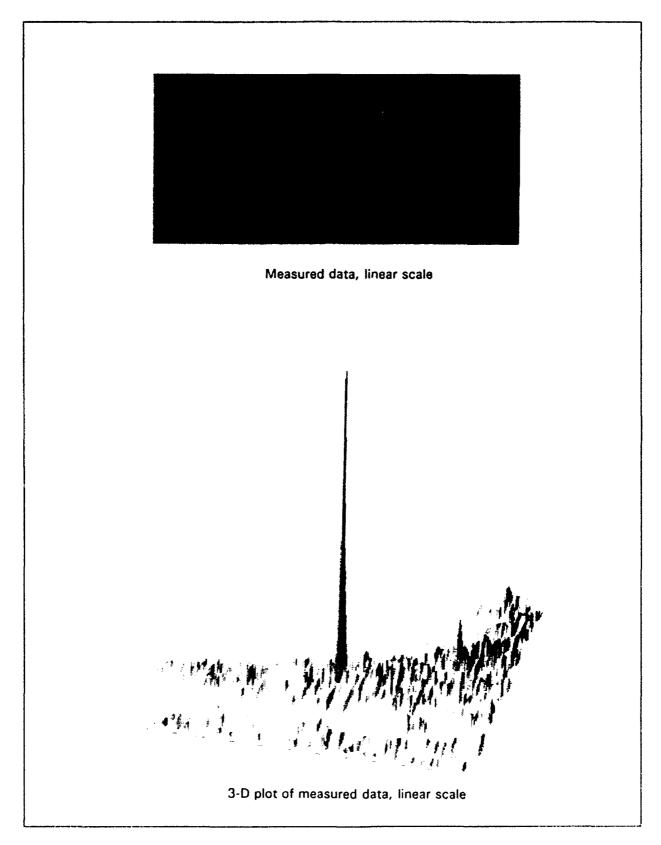


Figure C10. (Sheet 3 of 6)

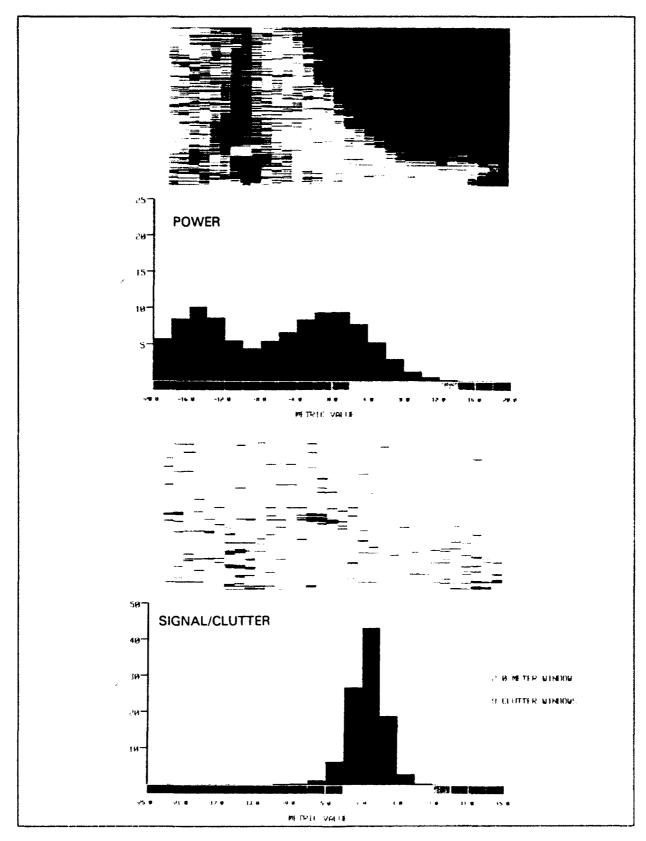


Figure C10. (Sheet 4 of 6) C64

Appendix C Relevant MSFD Test Site Data and Analysis Results

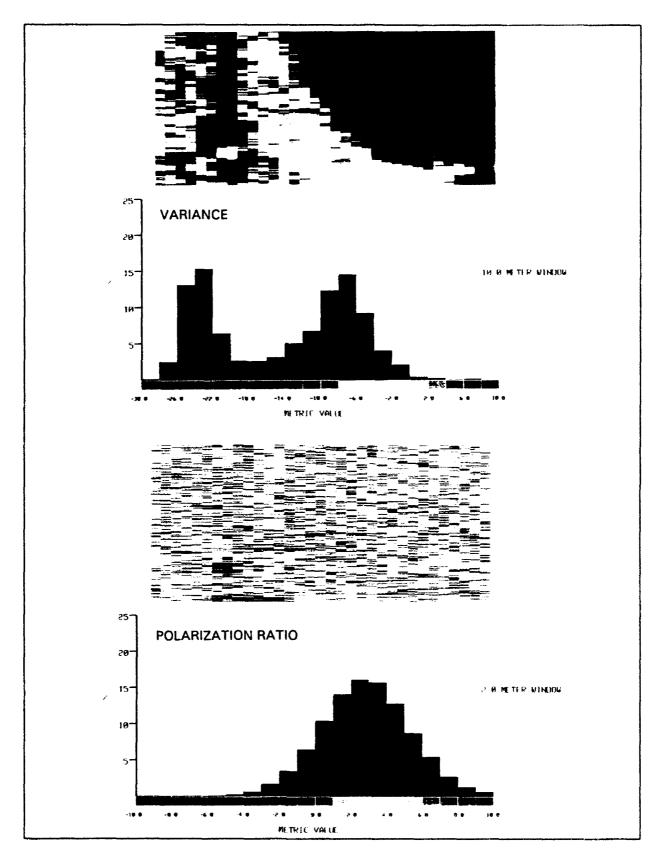
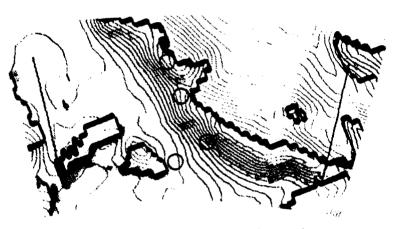


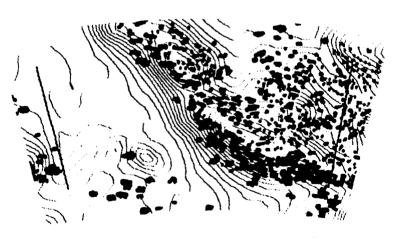
Figure C10. (Sheet 5 of 6)



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

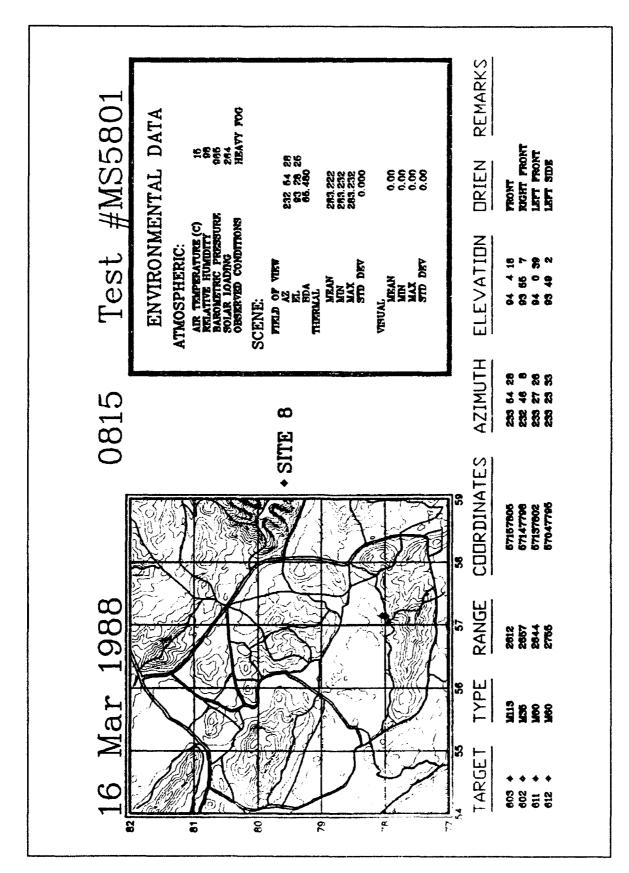


Figure C11. Summary data for MS5801 (Sheet 1 of 6)

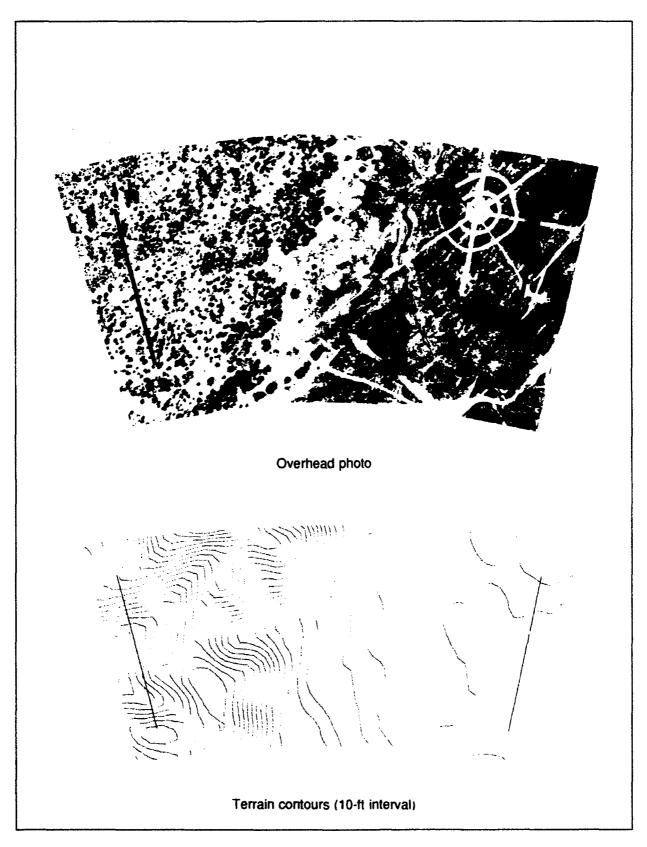


Figure C11. (Sheet 2 of 6)

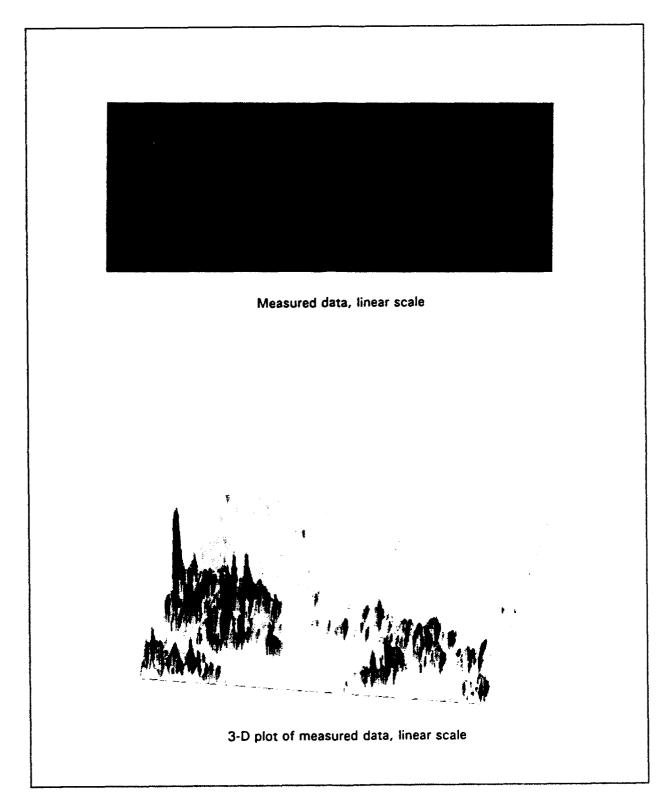


Figure C11. (Sheet 3 of 6)

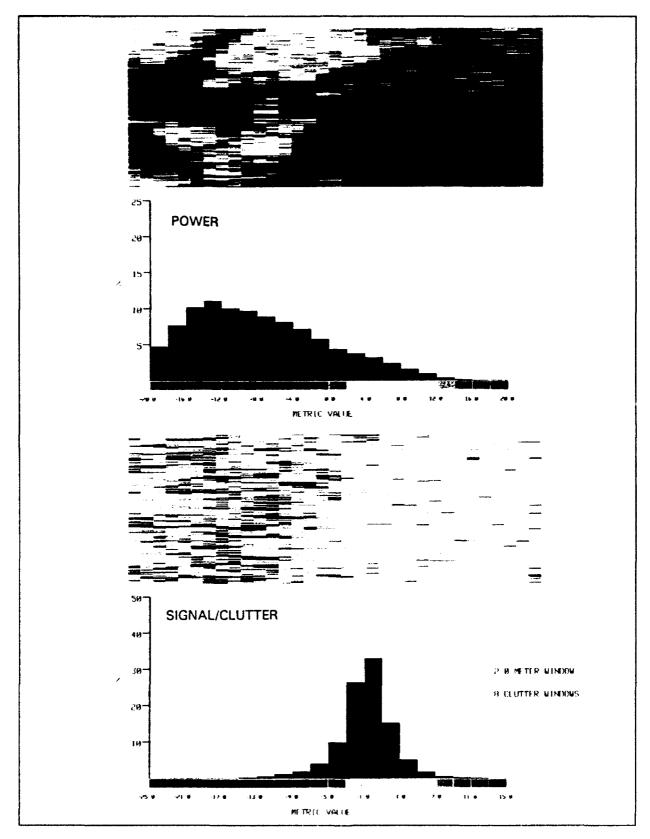


Figure C11. (Sheet 4 of 6) C70

Appendix C Relevant MSFD Test Site Data and Analysis Results

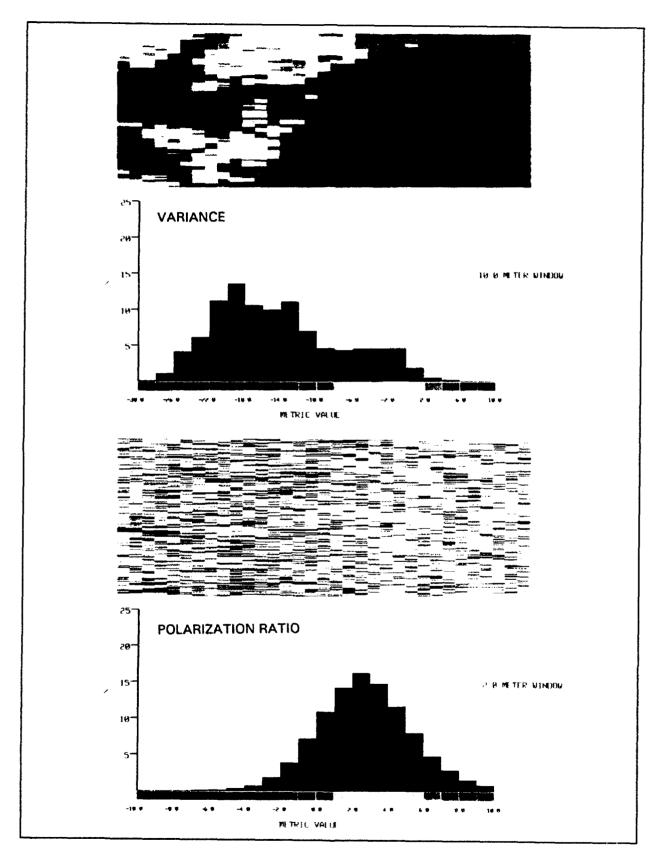
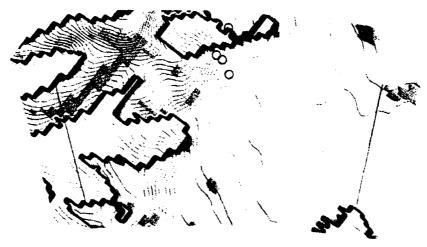


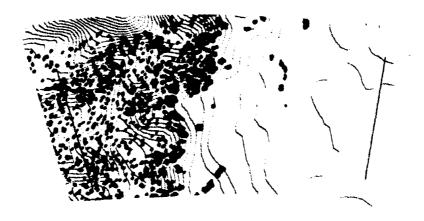
Figure C11. (Sheet 5 of 6)



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

Figure C11. (Sheet 6 of 6)

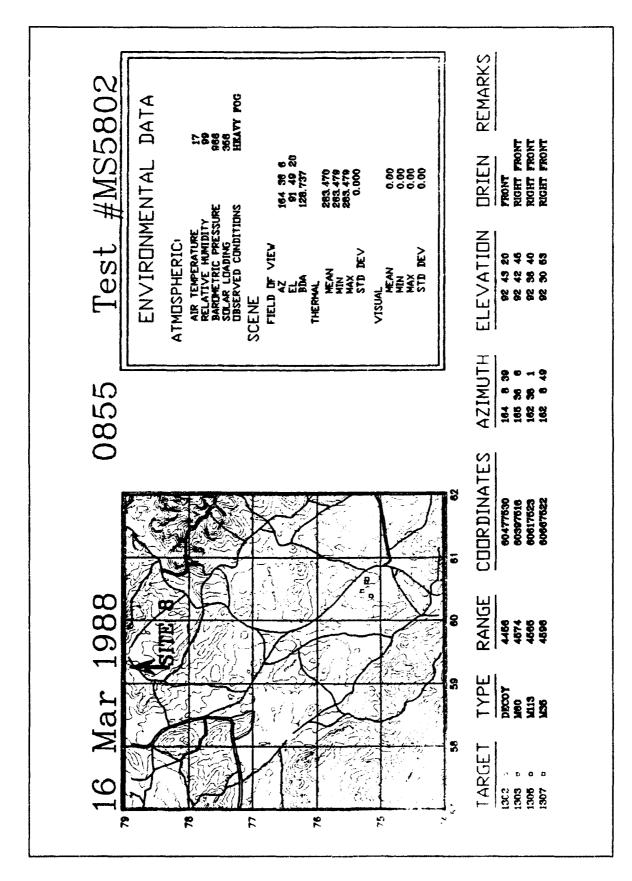


Figure C12. Summary data for MS5802 (Sheet 1 of 6)

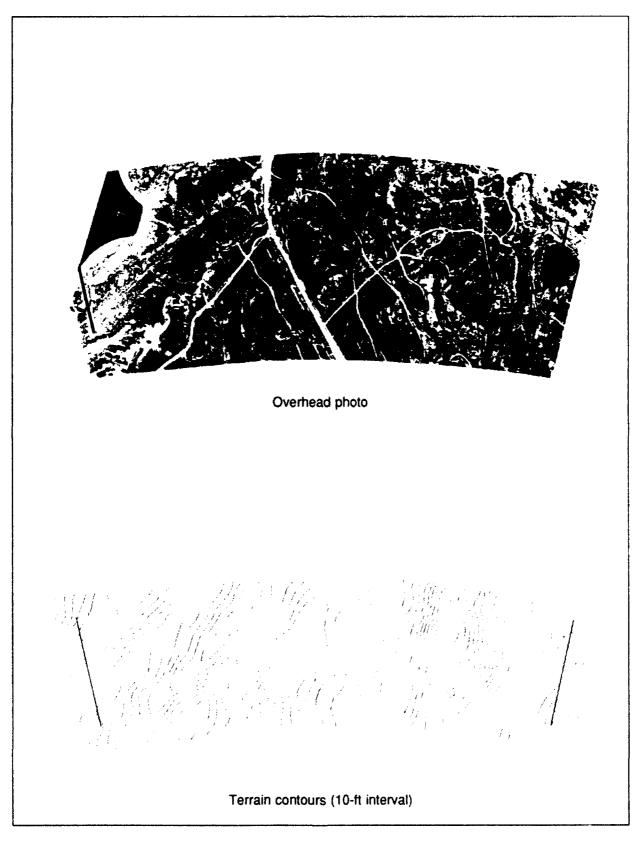


Figure C12. (Sheet 2 of 6)

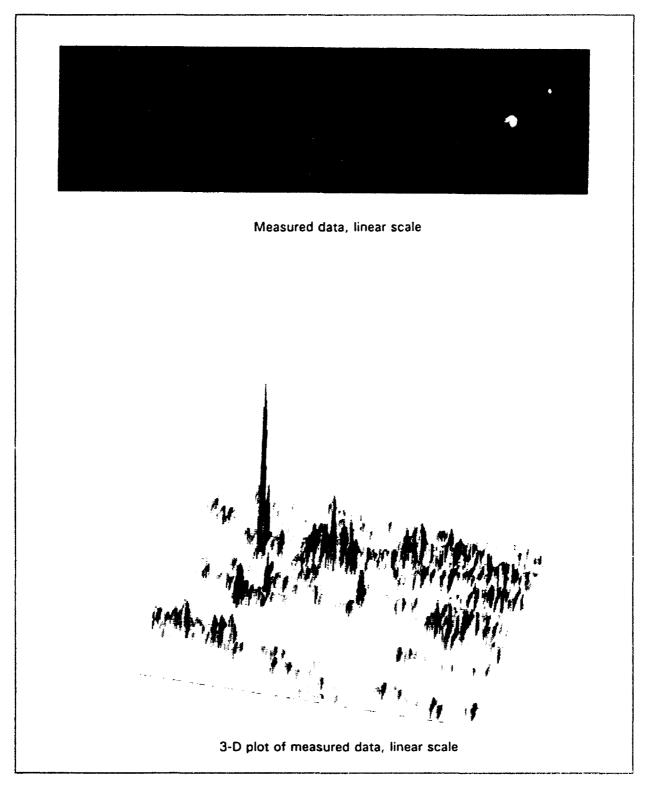


Figure C12. (Sheet 3 of 6)

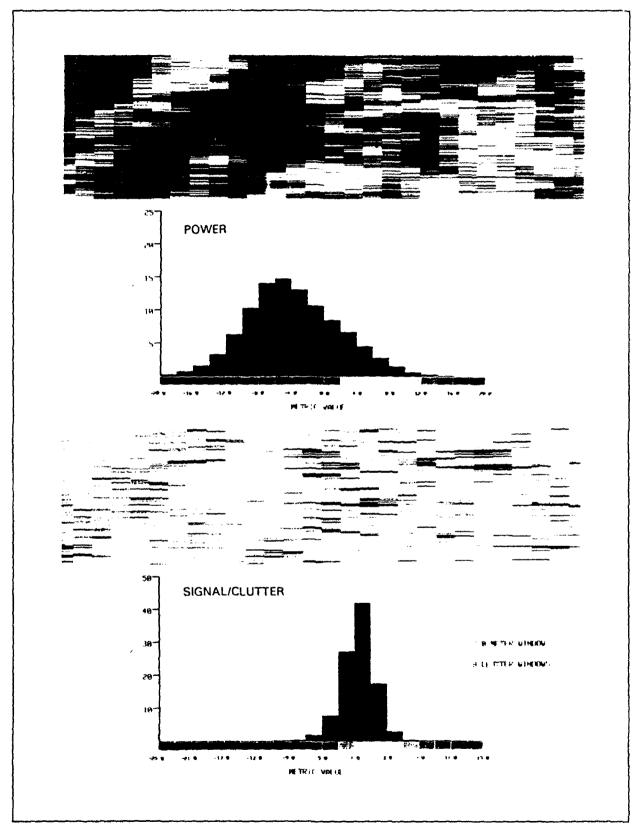


Figure C12. (Sheet 4 of 6)

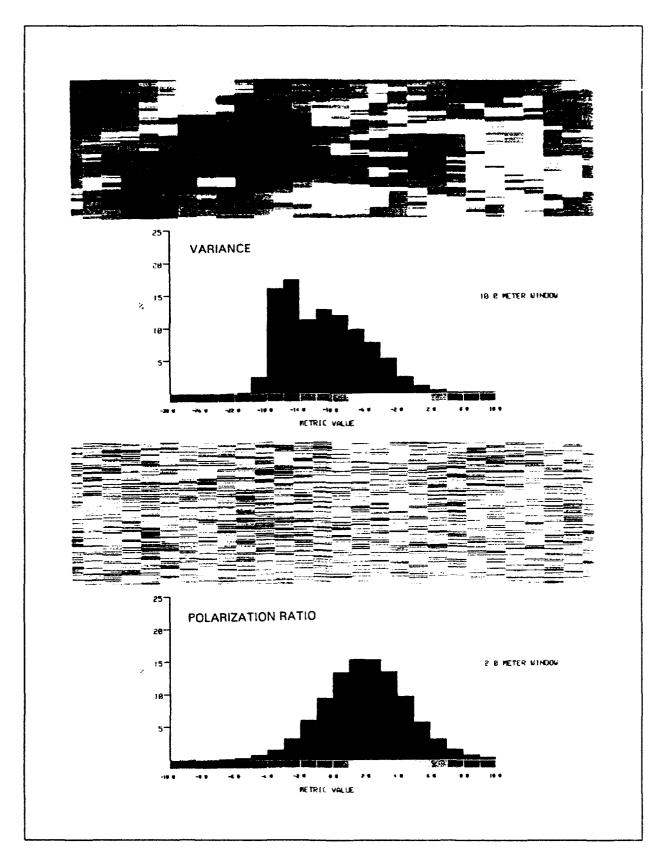
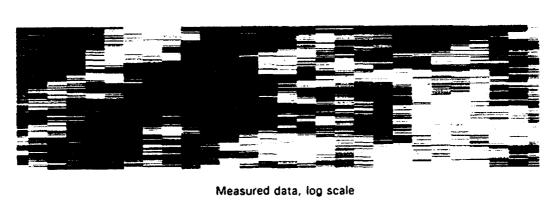


Figure C12. (Sheet 5 of 6)





Backscatter predictions, log scale

Terrain contours and vegetation overlay

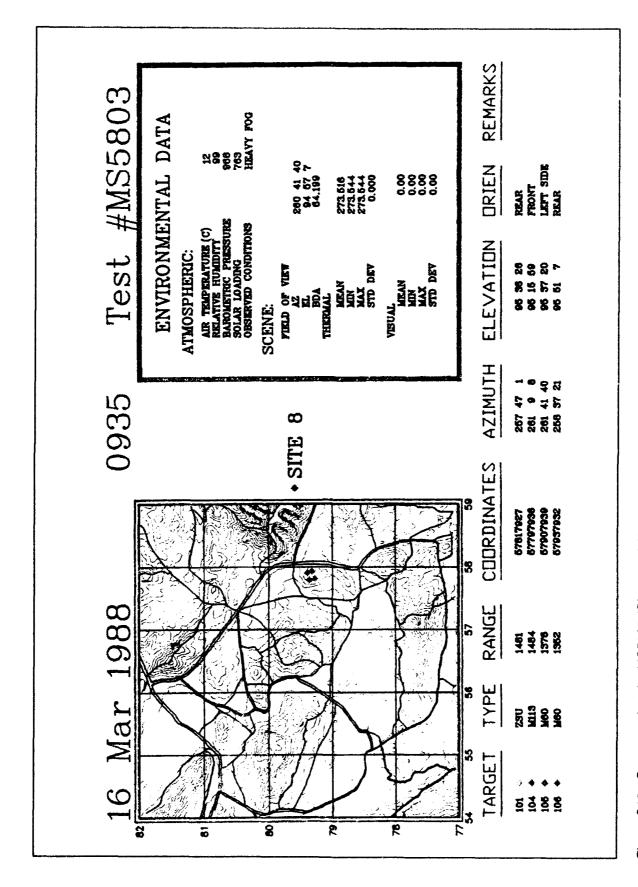


Figure C13. Summary data for MS5803 (Sheet 1 of 6)

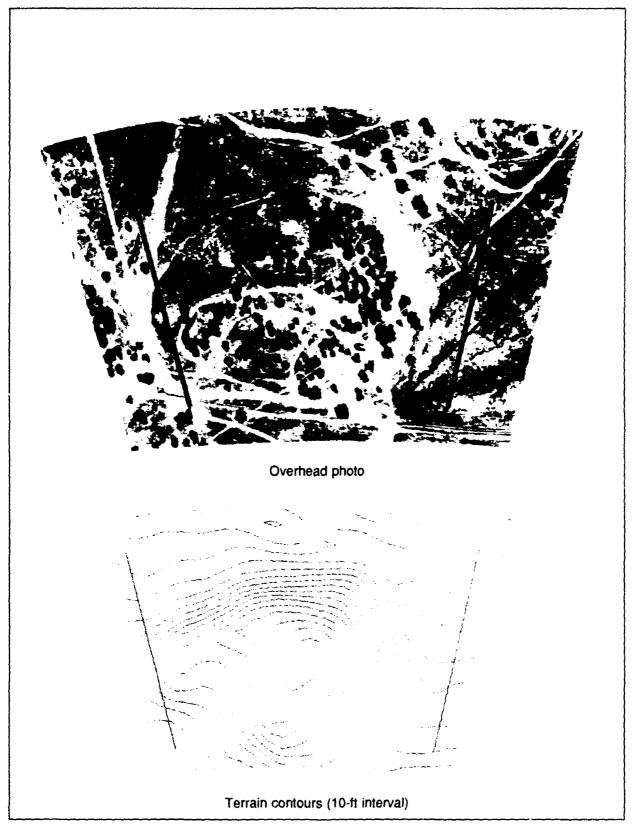


Figure C13. (Sheet 2 of 6) C80

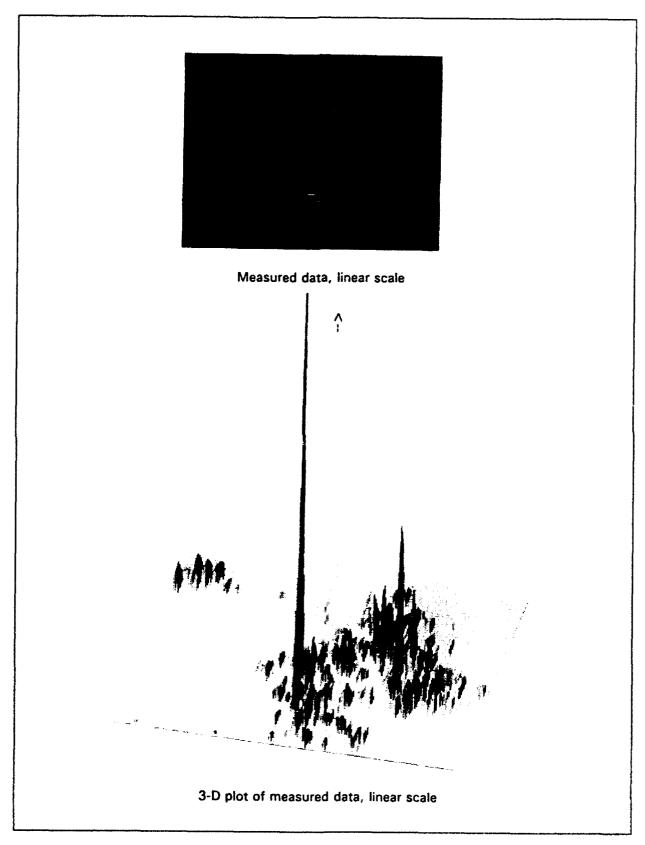


Figure C13. (Sheet 3 of 6)

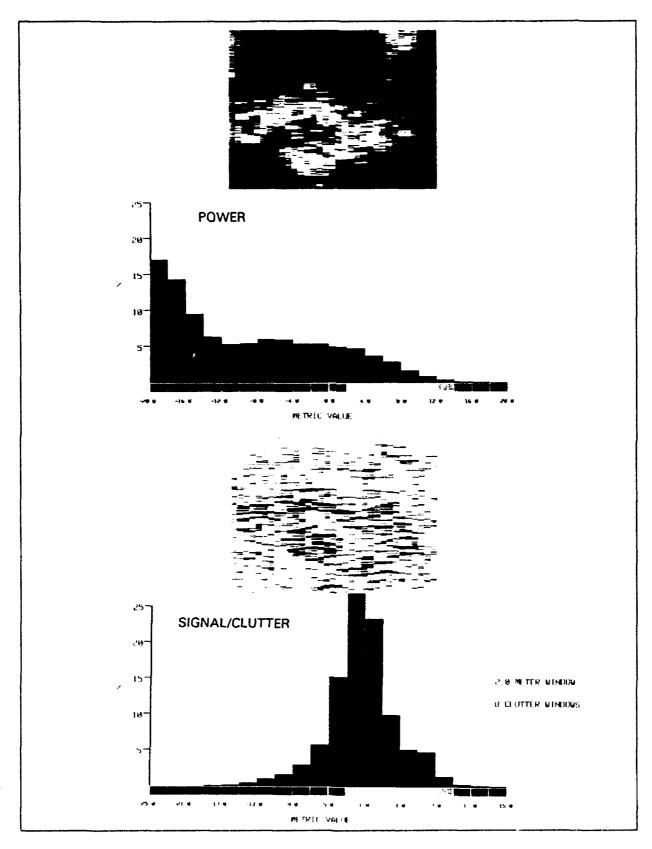


Figure C13. (Sheet 4 of 6) C82

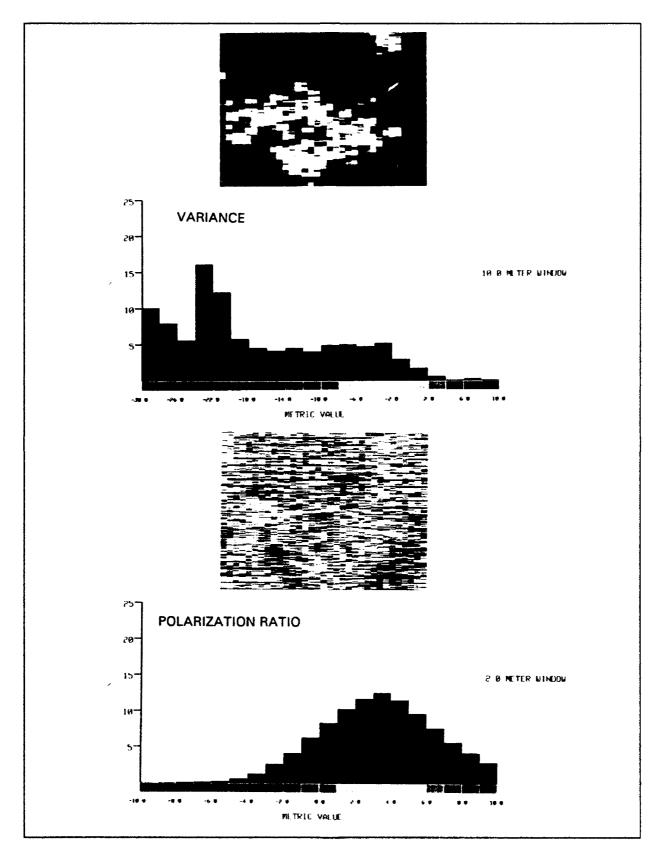
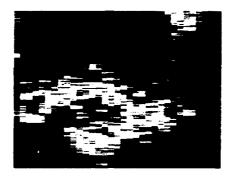
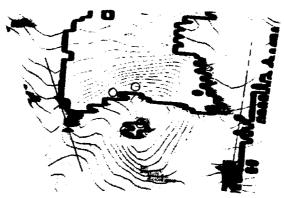


Figure C13. (Sheet 5 of 6)



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

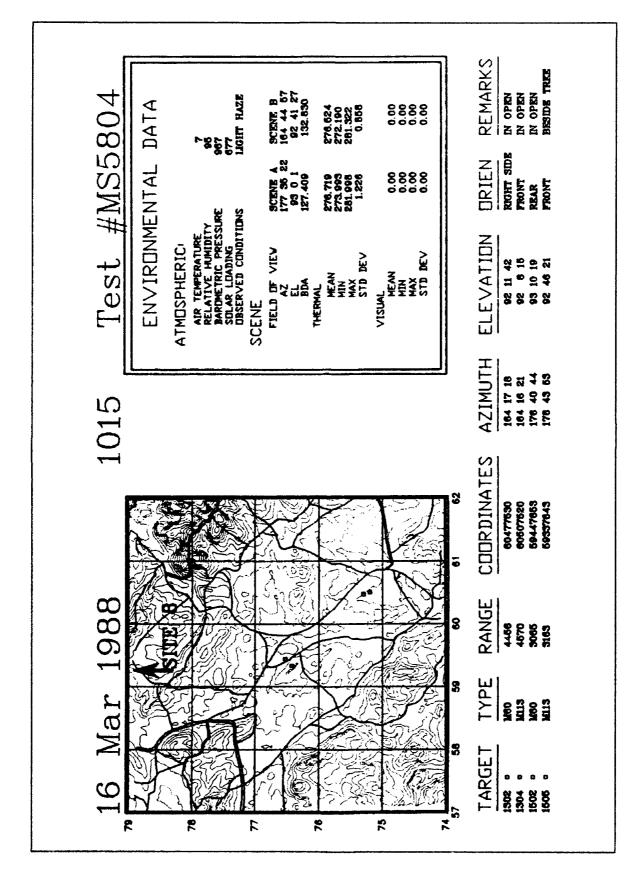


Figure C14. Summary data for MS5804 (Sheet 1 of 6)

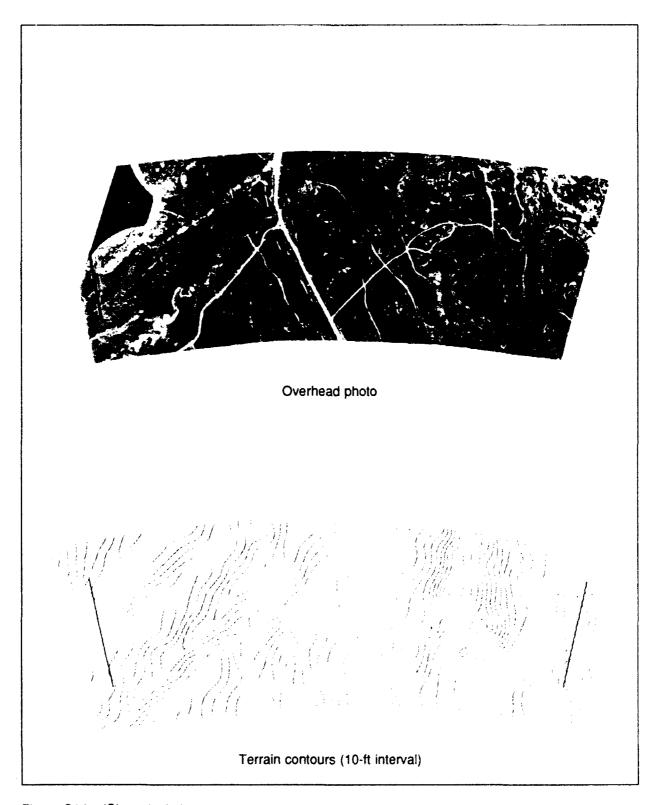


Figure C14. (Sheet 2 of 6)

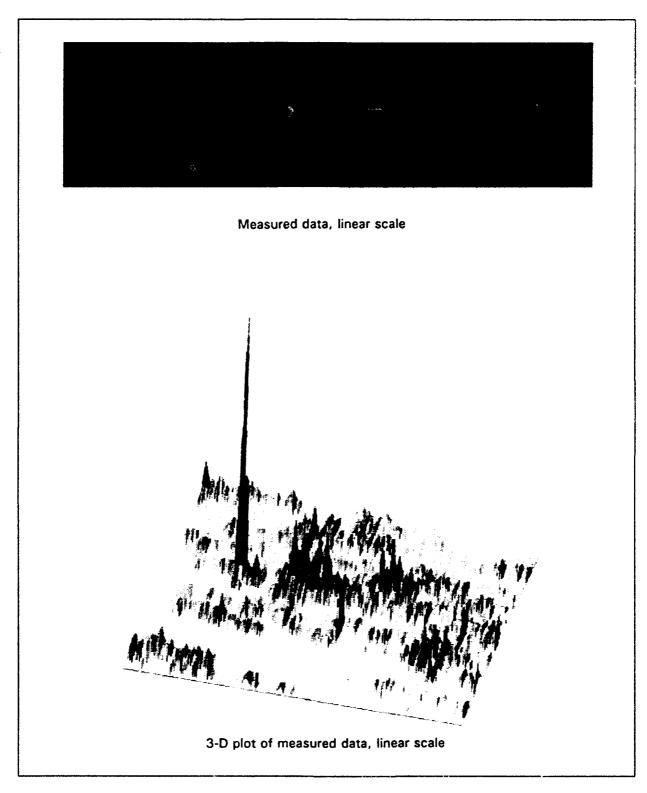


Figure C14. (Sheet 3 of 6)

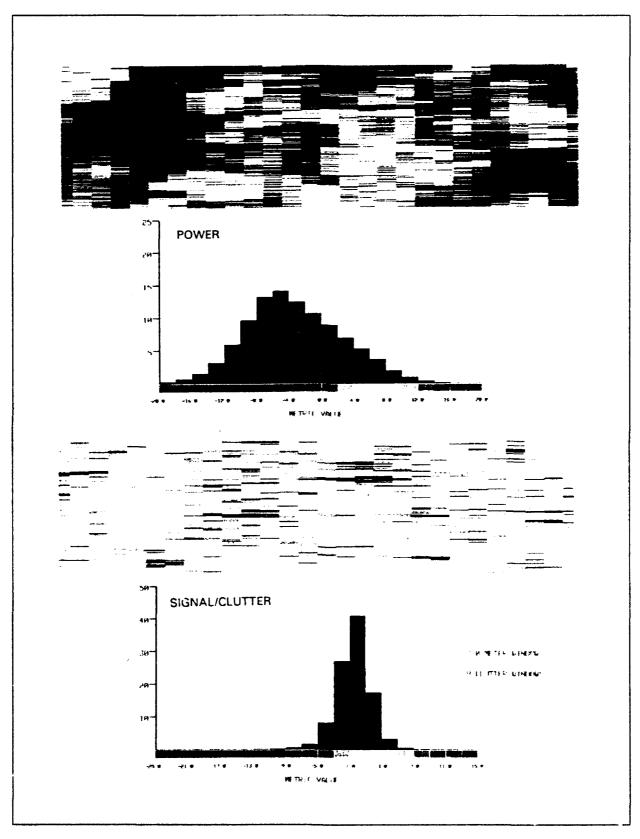


Figure C14. (Sheet 4 of 6)

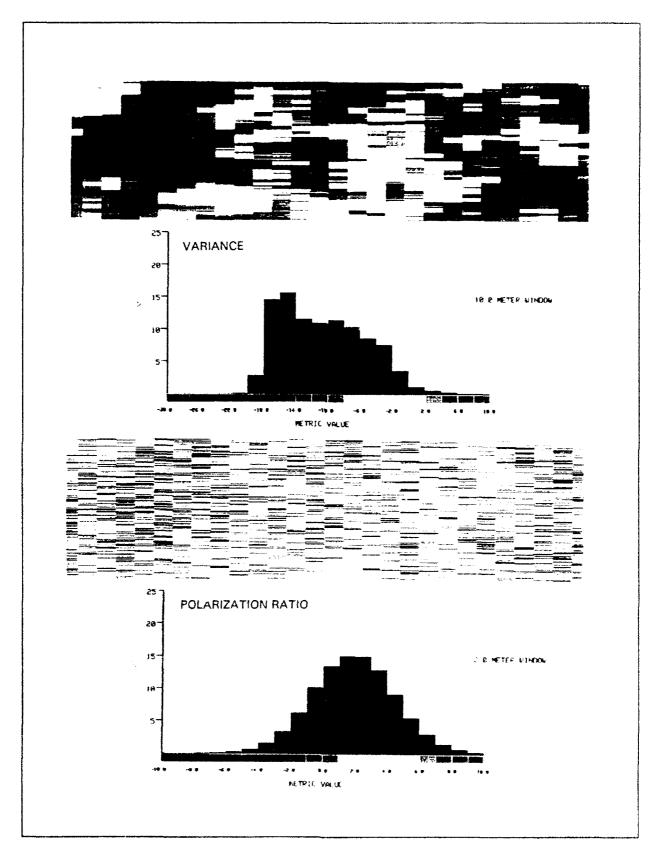


Figure C14. (Sheet 5 of 6)

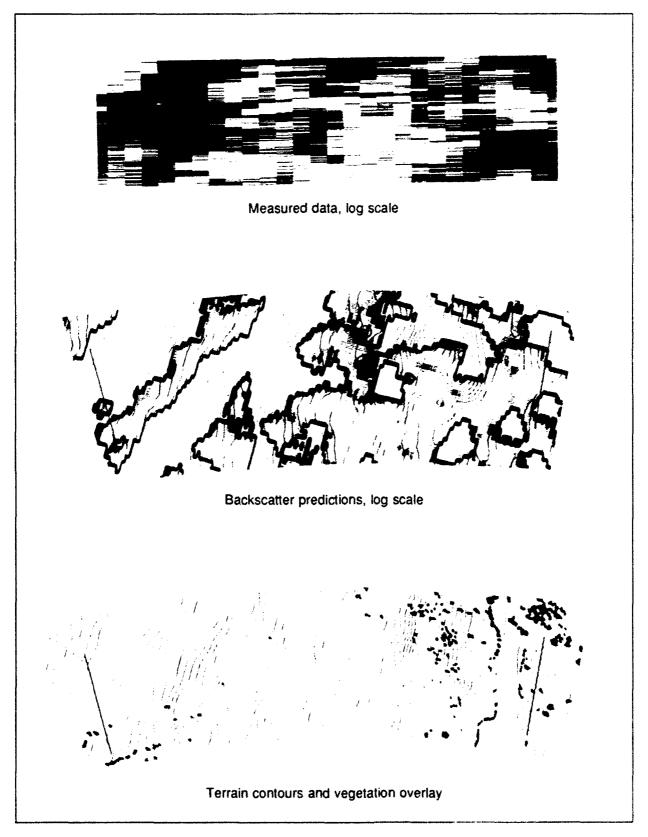


Figure C14. (Sheet 6 of 6)

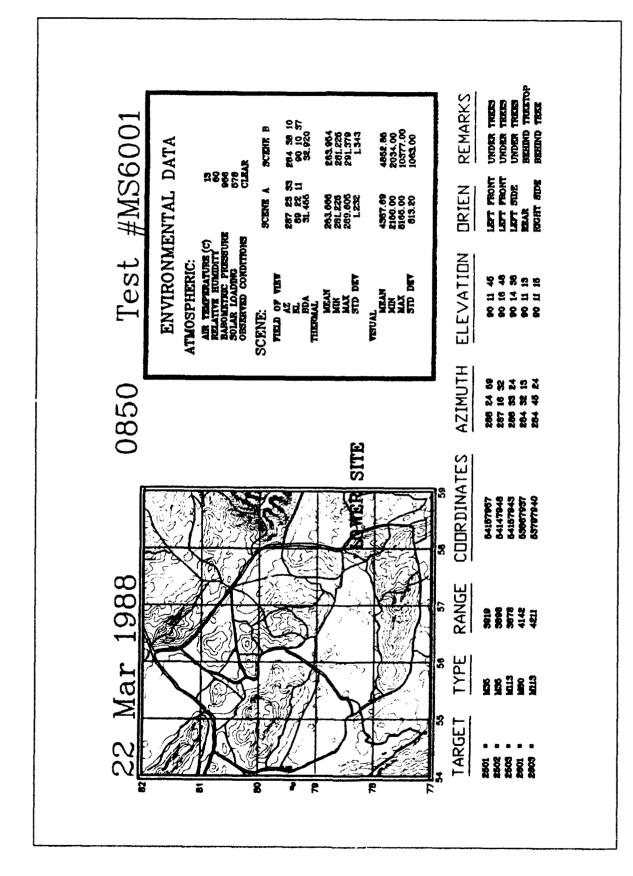


Figure C15. Summary data for MS6001 (Sheet 1 of 7)

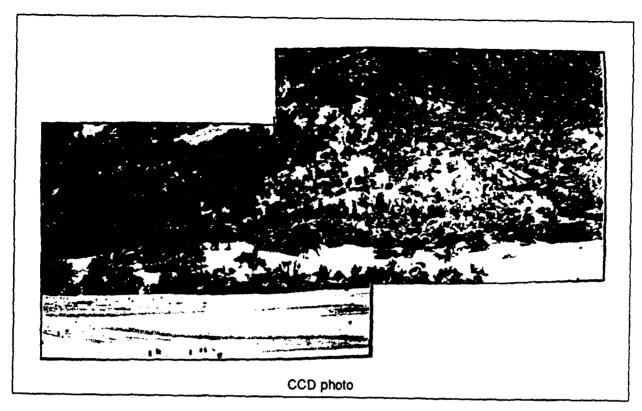


Figure C15. (Sheet 2 of 7)

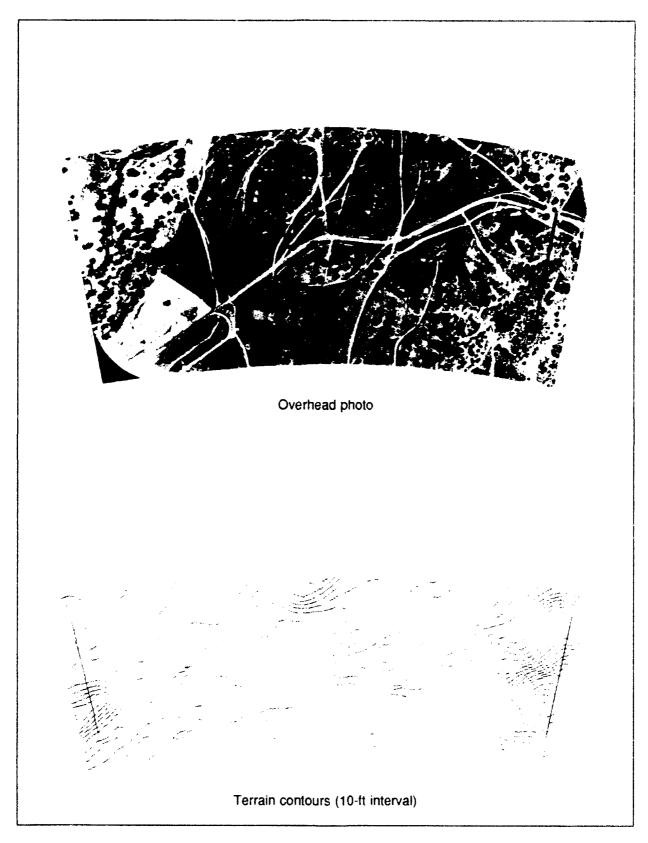


Figure C15. (Sheet 3 of 7)

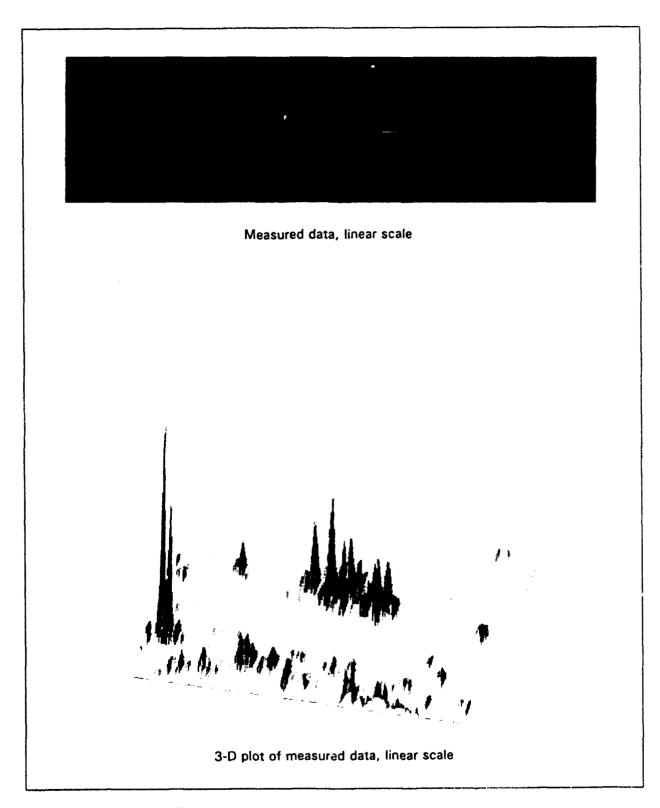


Figure C15. (Sheet 4 of 7)

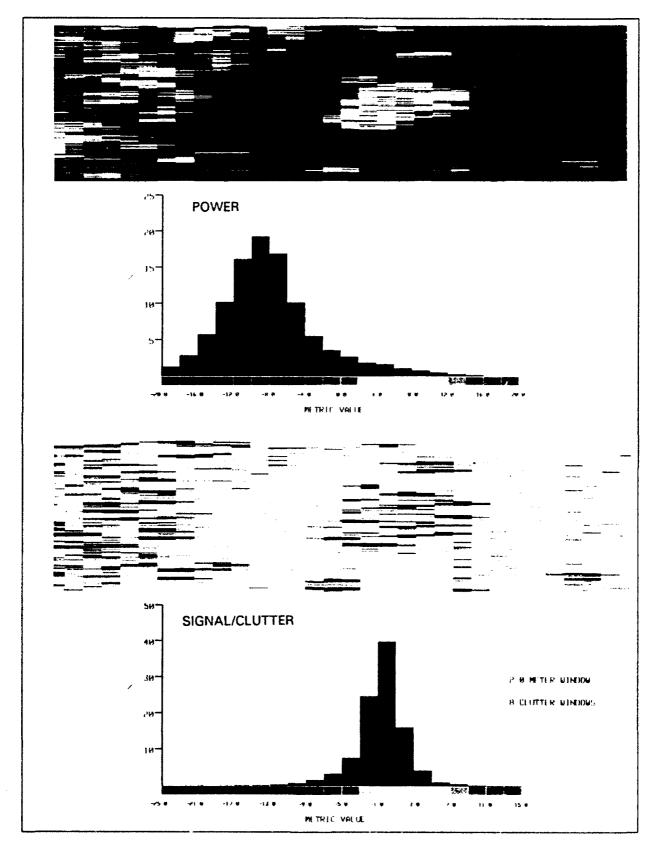


Figure C15. (Sheet 5 of 7)

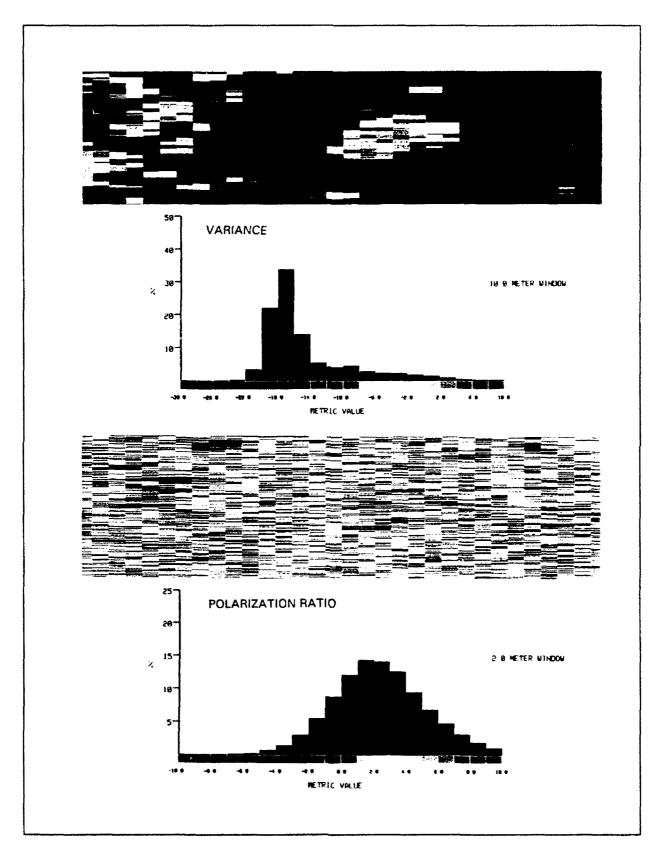


Figure C15. (Sheet 6 of 7)

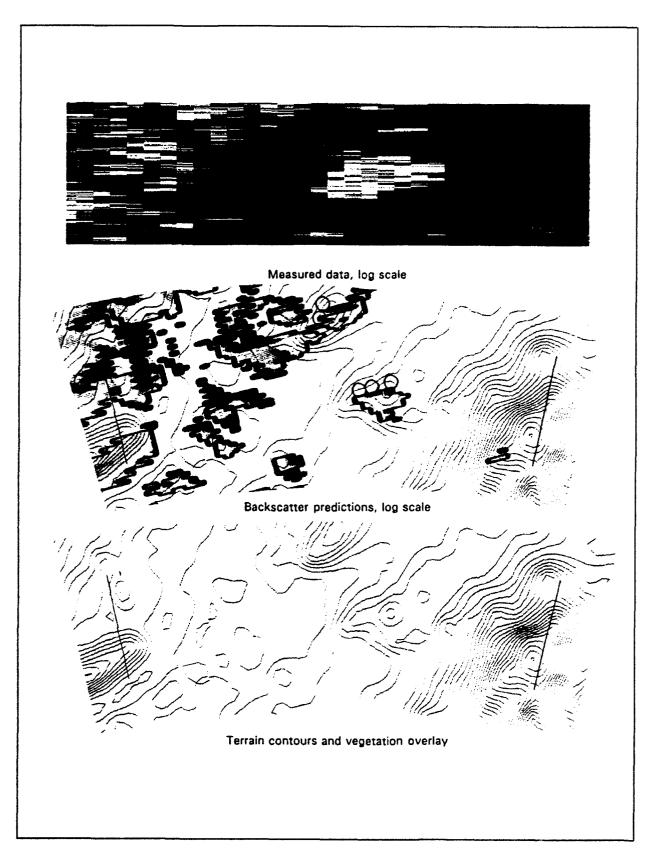


Figure C15. (Sheet 7 of 7)

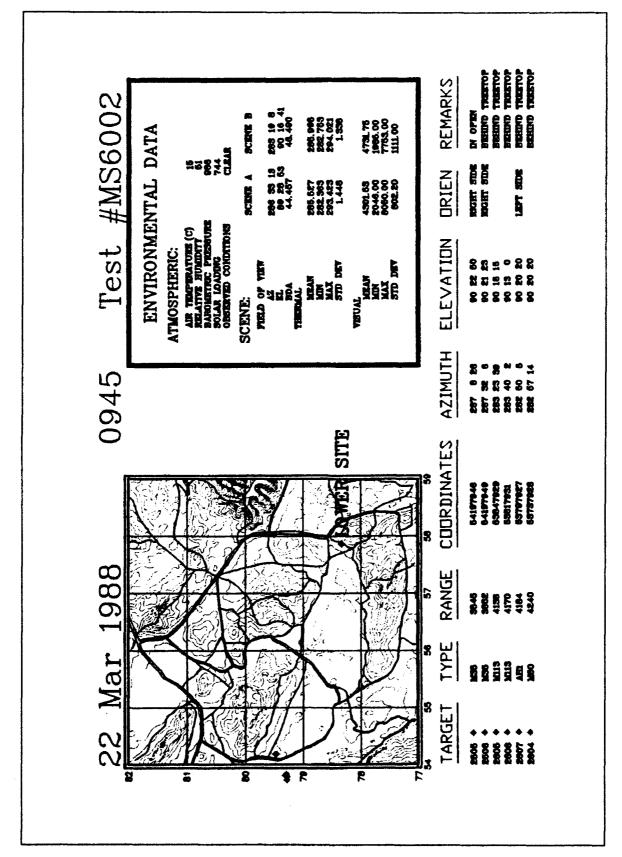


Figure C16. Summary data for MS6002 (Sheet 1 of 7)

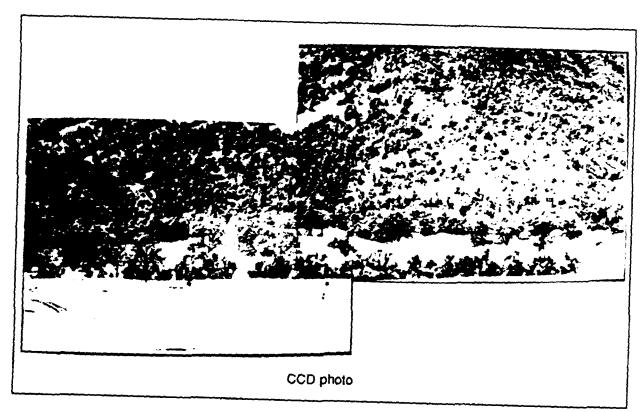


Figure C16. (Sheet 2 of 7)

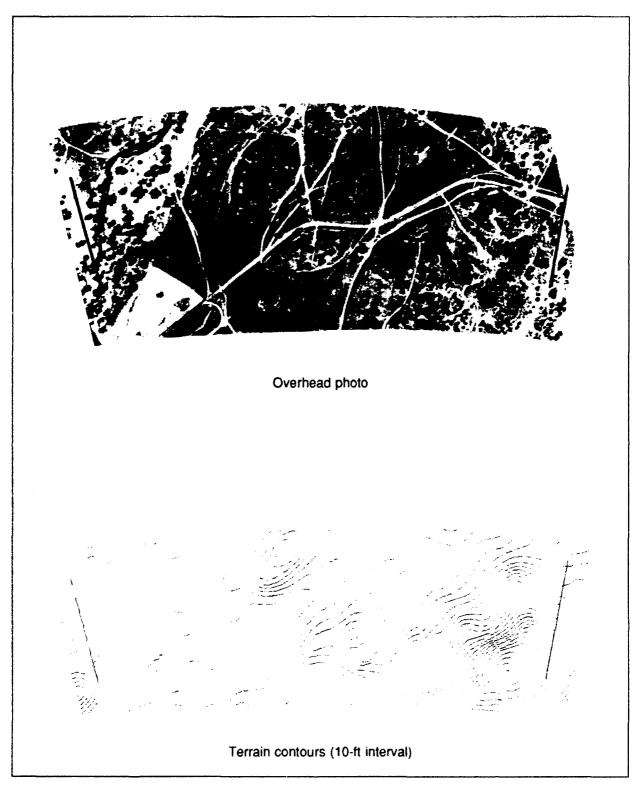


Figure C16. (Sheet 3 of 7)

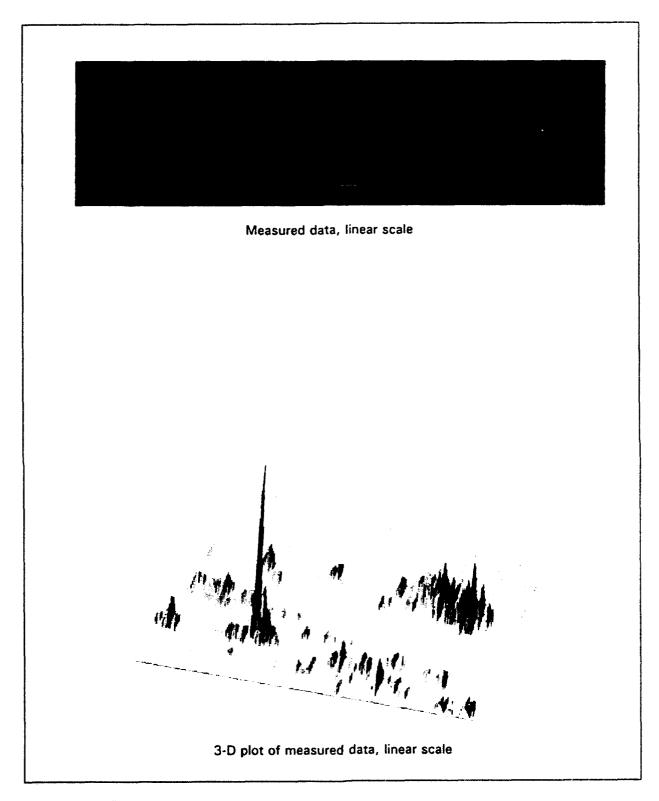


Figure C16. (Sheet 4 of 7)

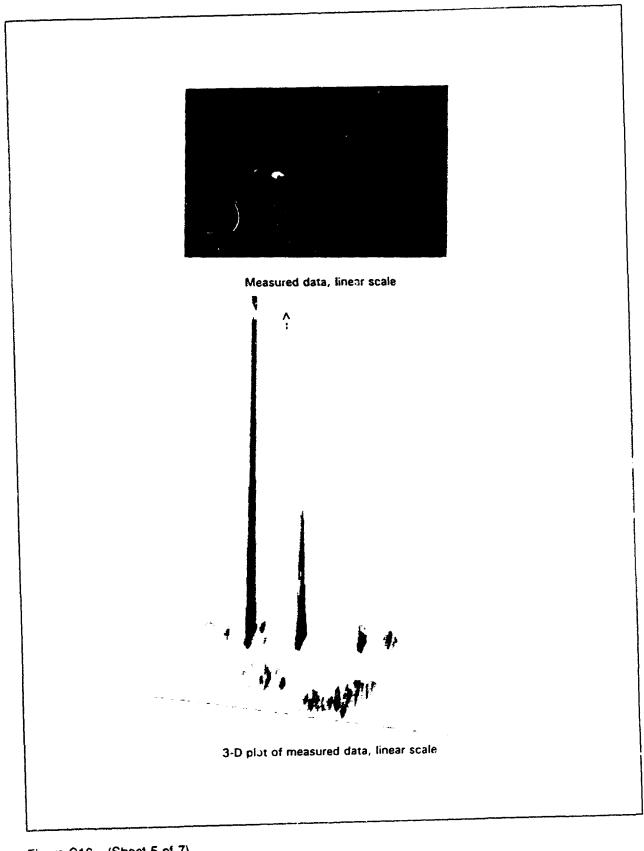


Figure C16. (Sheet 5 of 7)

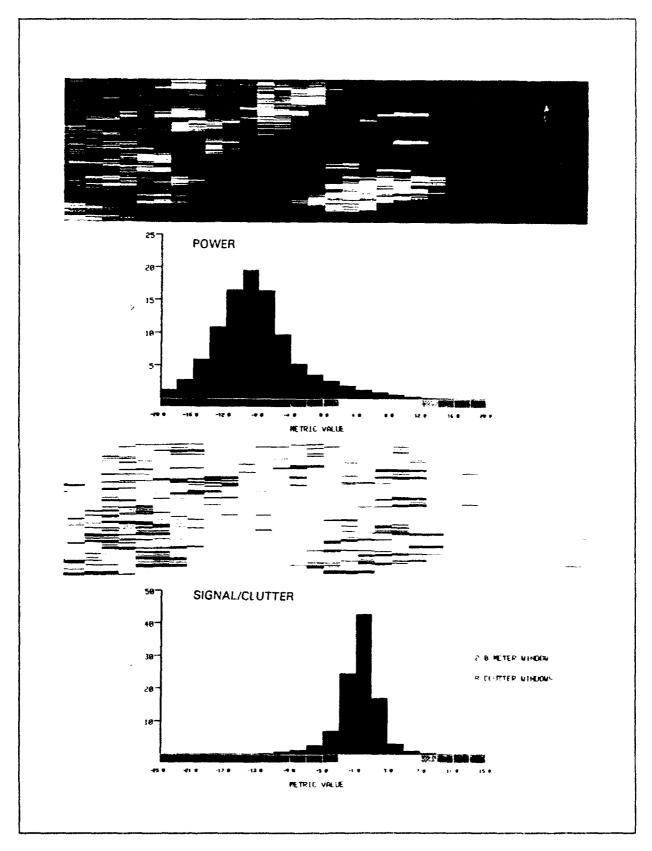


Figure C16. (Sheet 6 of 7)

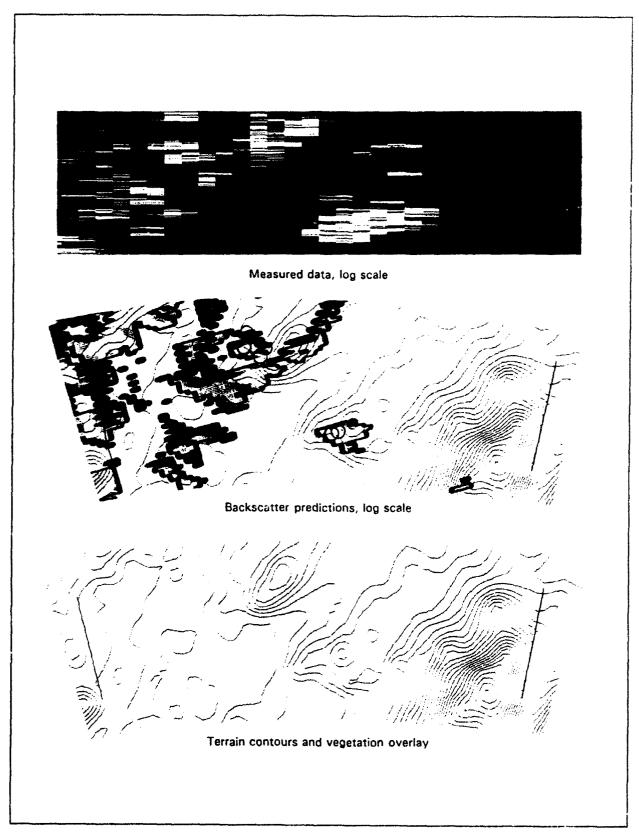


Figure C16. (Sheet 7 of 7) C104

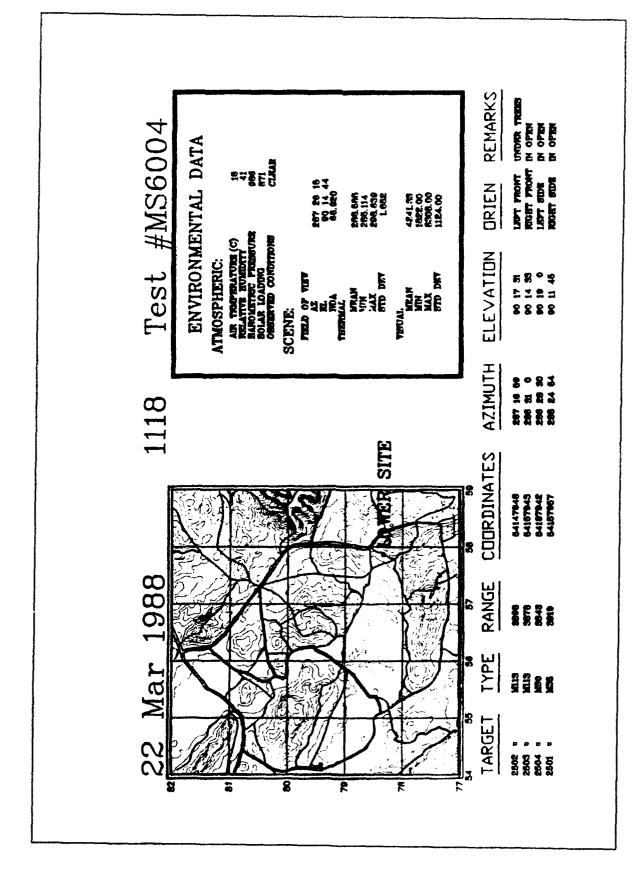


Figure C17. Summary data for MS6004 (Sheet 1 of 7)

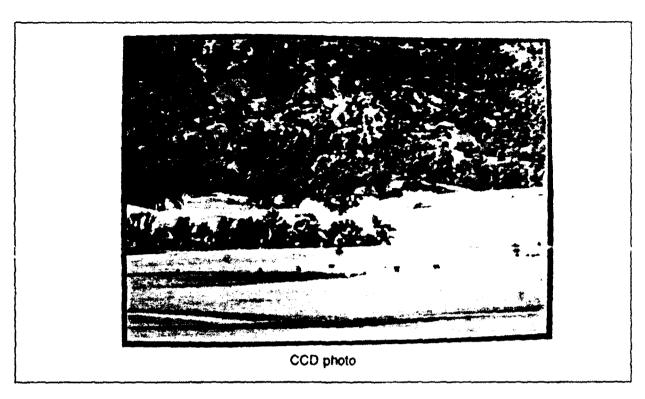


Figure C17. (Sheet 2 of 7)

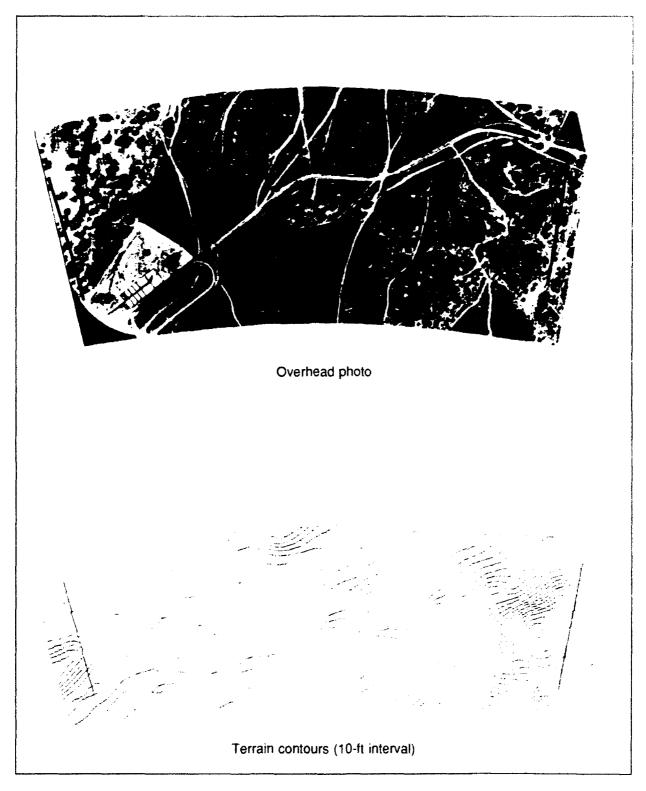


Figure C17. (Sheet 3 of 7)

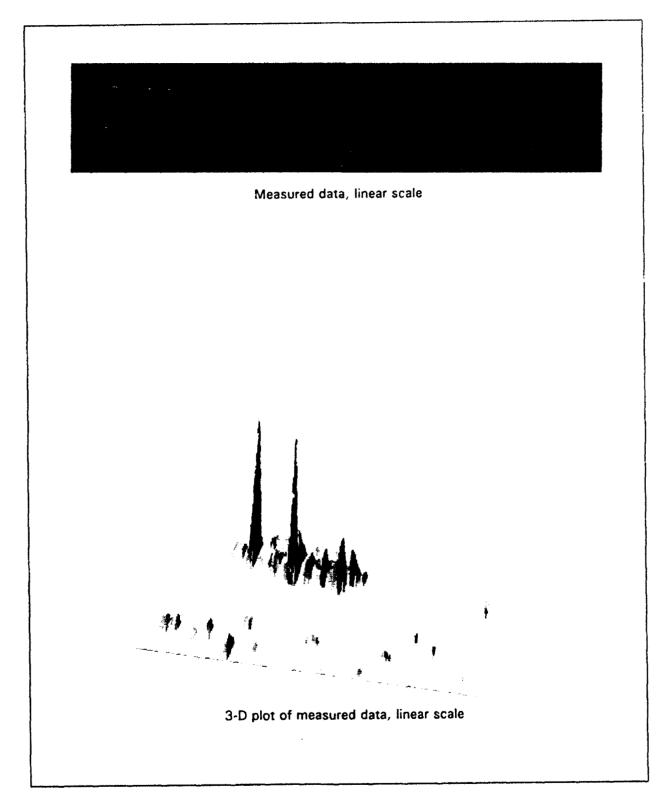


Figure C17. (Sheet 4 of 7)

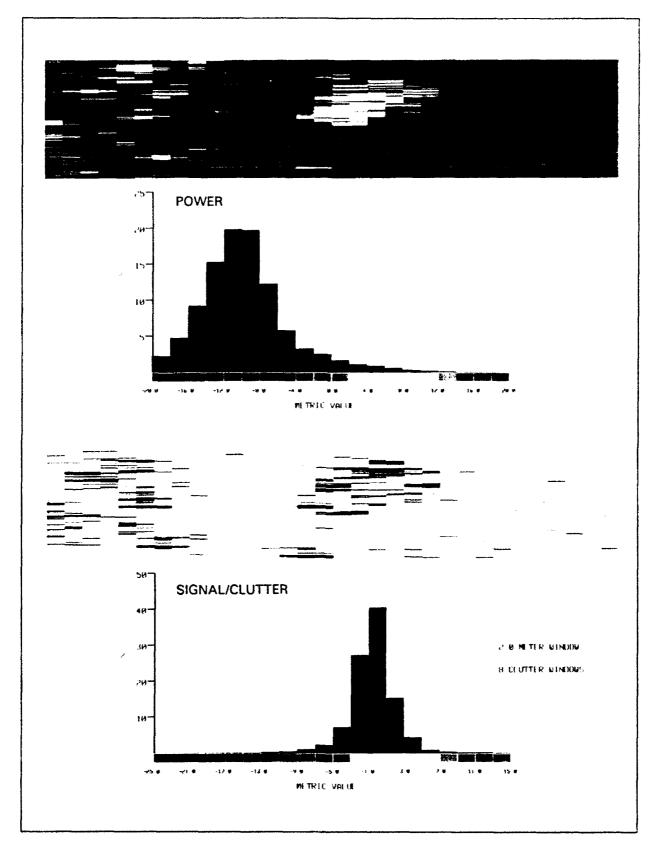


Figure C17. (Sheet 5 of 7)

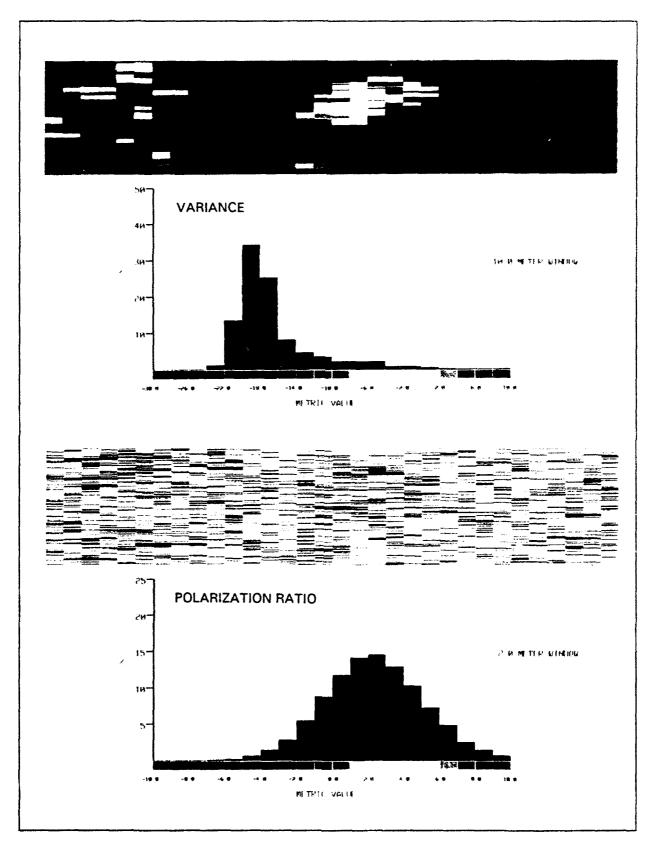


Figure C17. (Sheet 6 of 7) C110

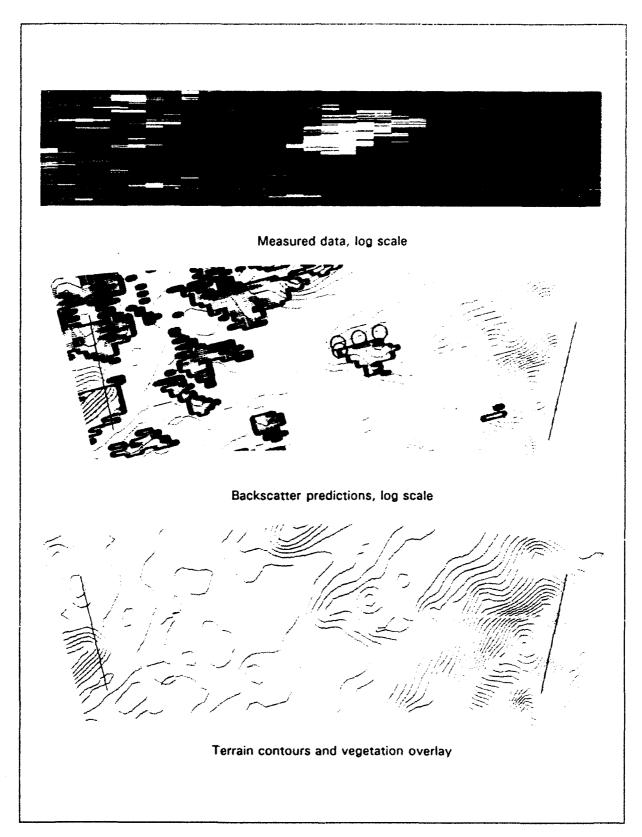


Figure C17. (Sheet 7 of 7)

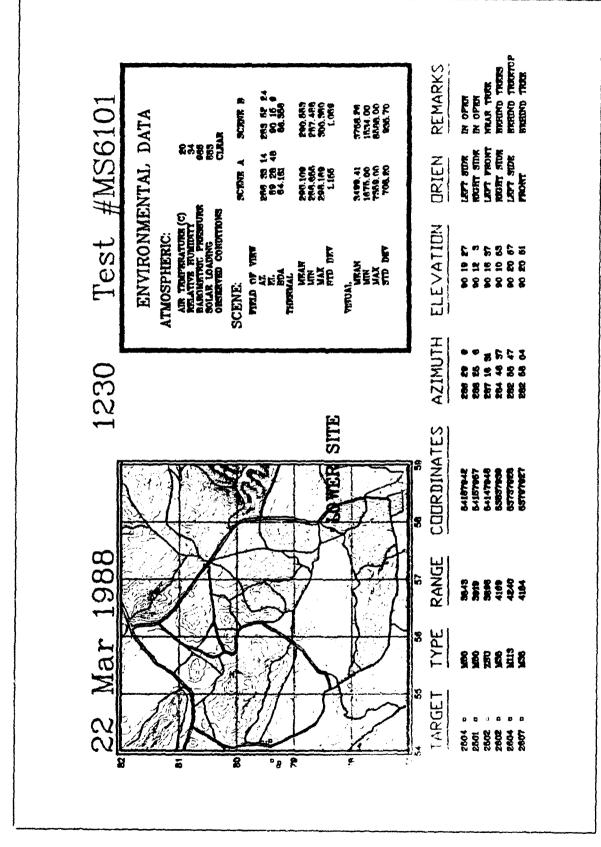


Figure C18. Summary data for MS6101 (Sheet 1 of 7)

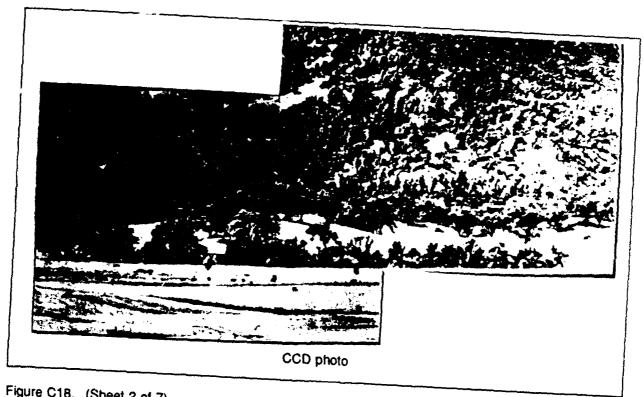


Figure C18. (Sheet 2 of 7)

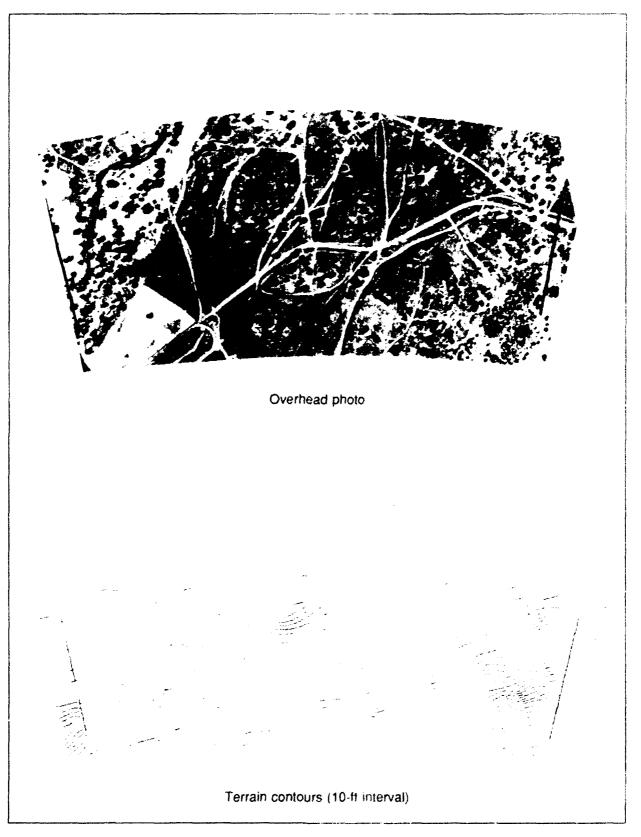


Figure C18. (Sheet 3 of 7)

C114

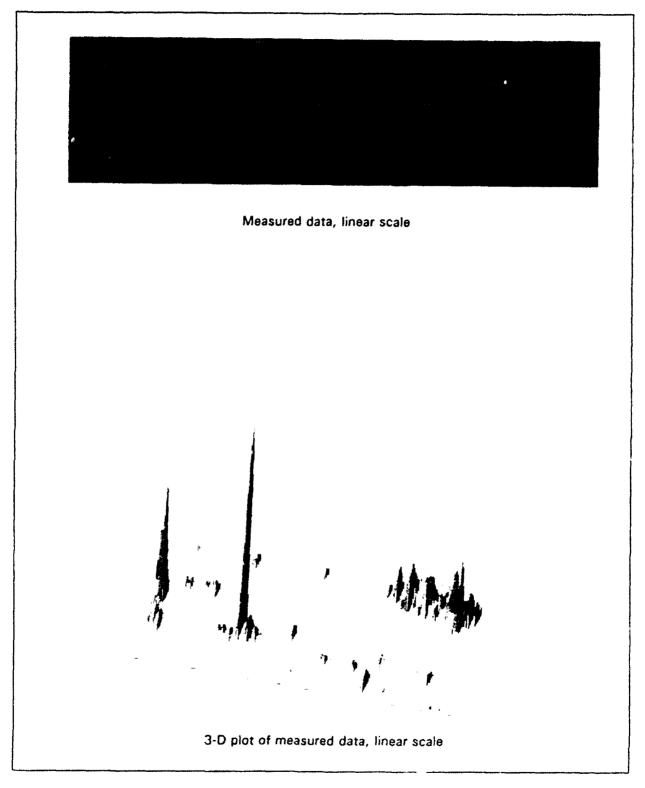


Figure C18. (Sheet 4 of 7)

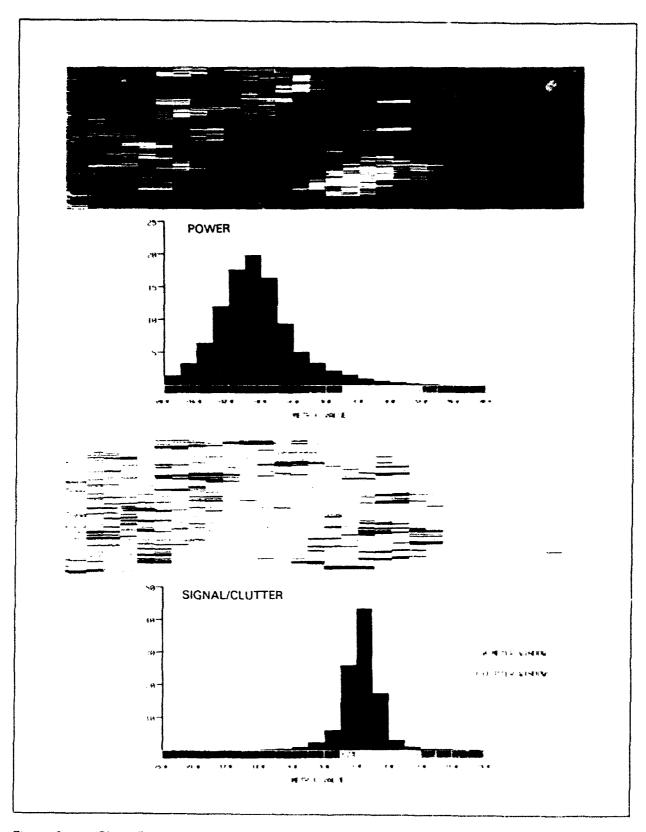


Figure C18 (Sheet 5 of 7)

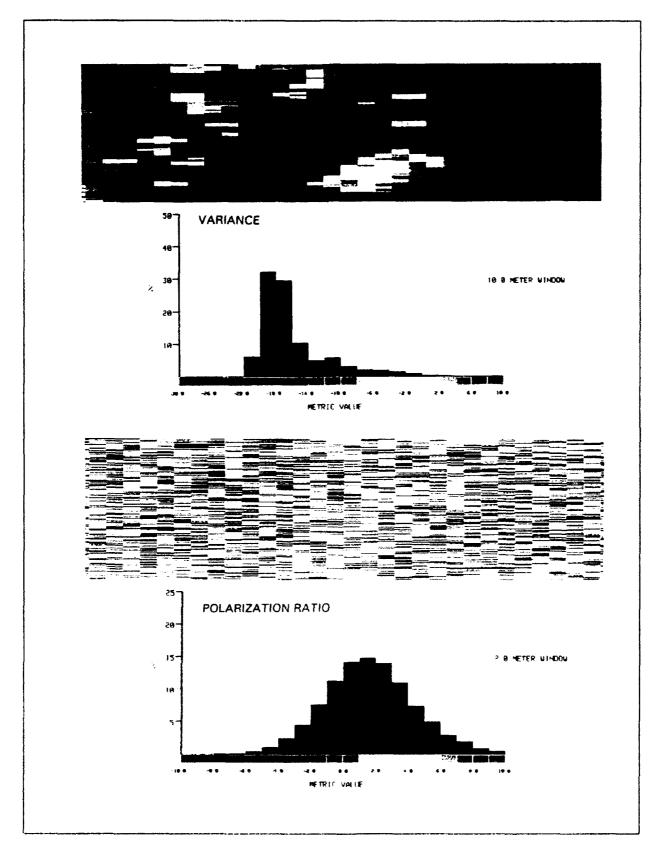


Figure C18. (Sheet 6 of 7)

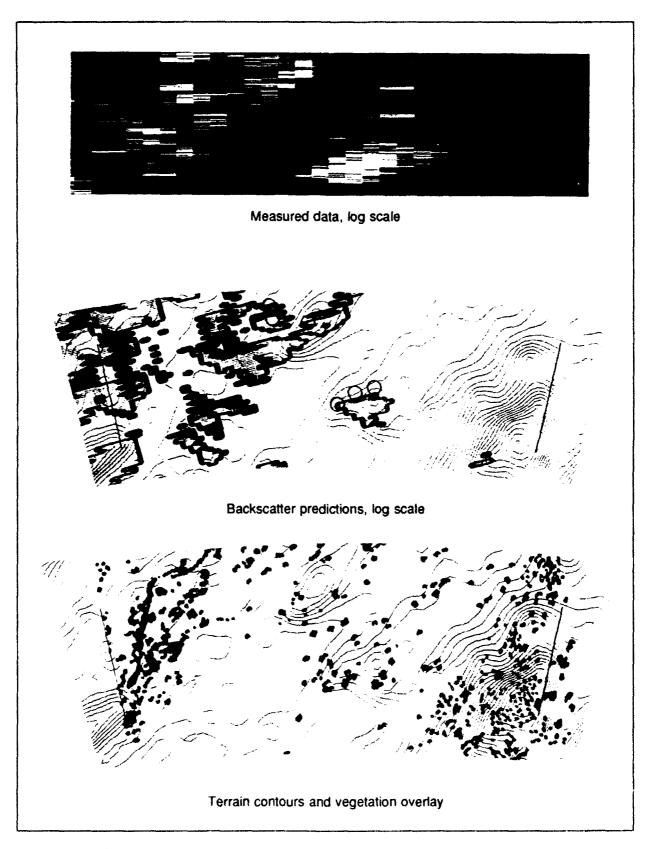


Figure C18. (Sheet 7 of 7) C118

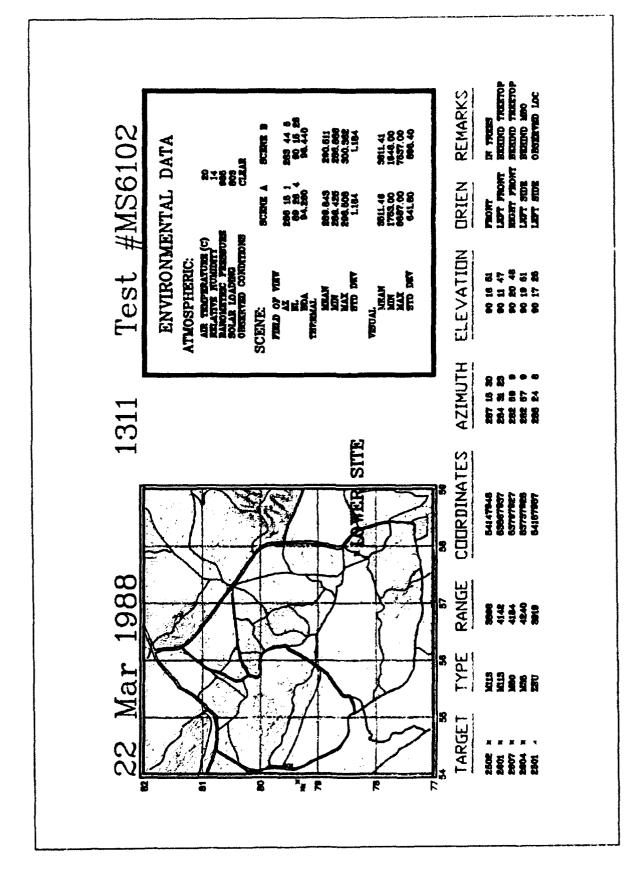


Figure C19. Summary data for MS6102 (Sheet 1 of 7)

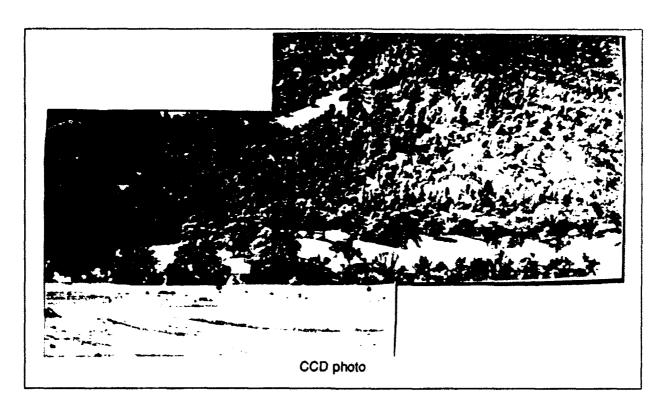


Figure C19. (Sheet 2 of 7)

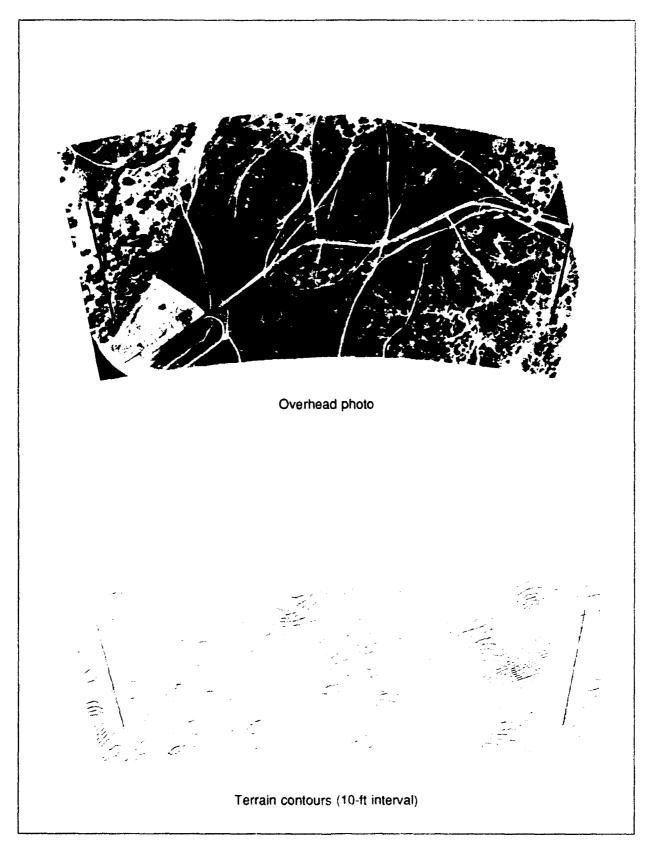


Figure C19. (Sheet 3 of 7)

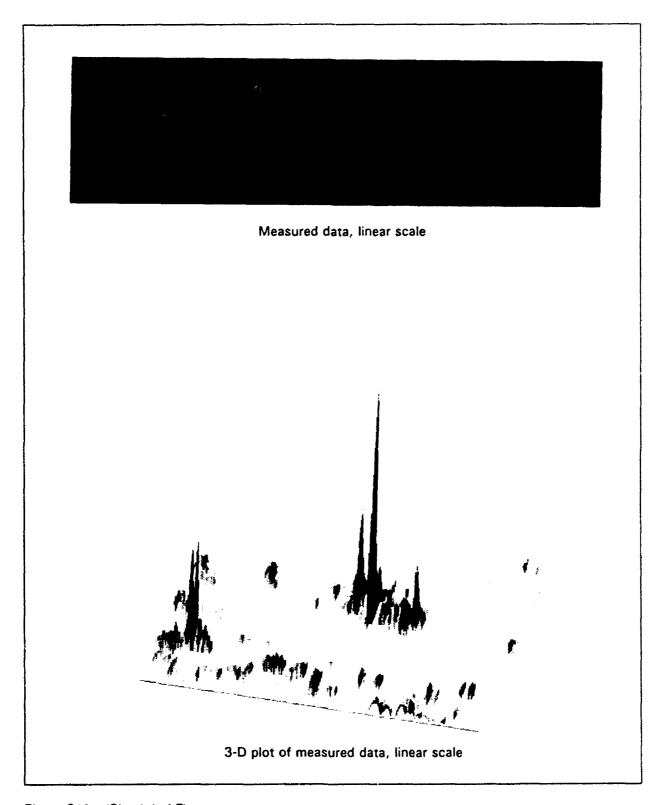


Figure C19. (Sheet 4 of 7)

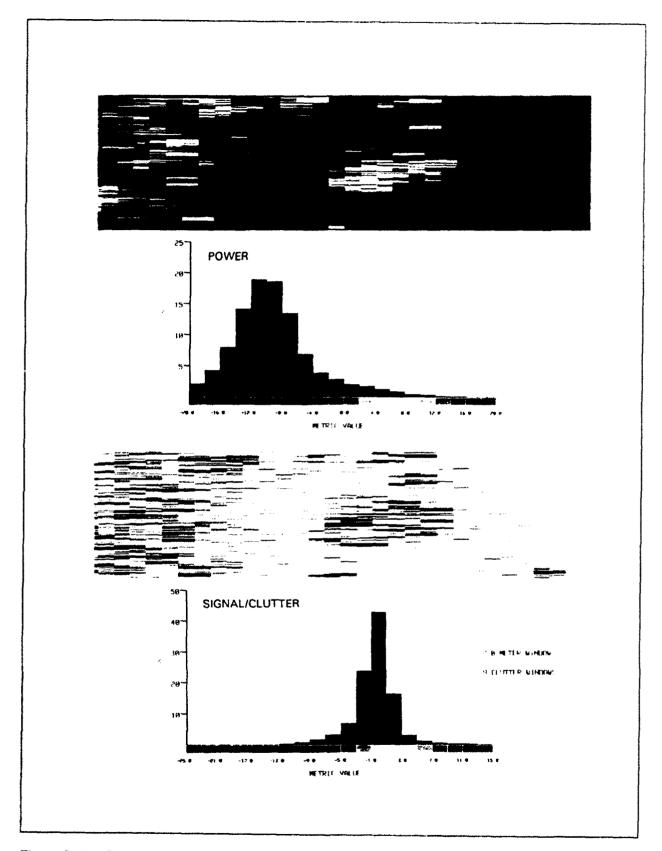


Figure C19. (Sheet 5 of 7)

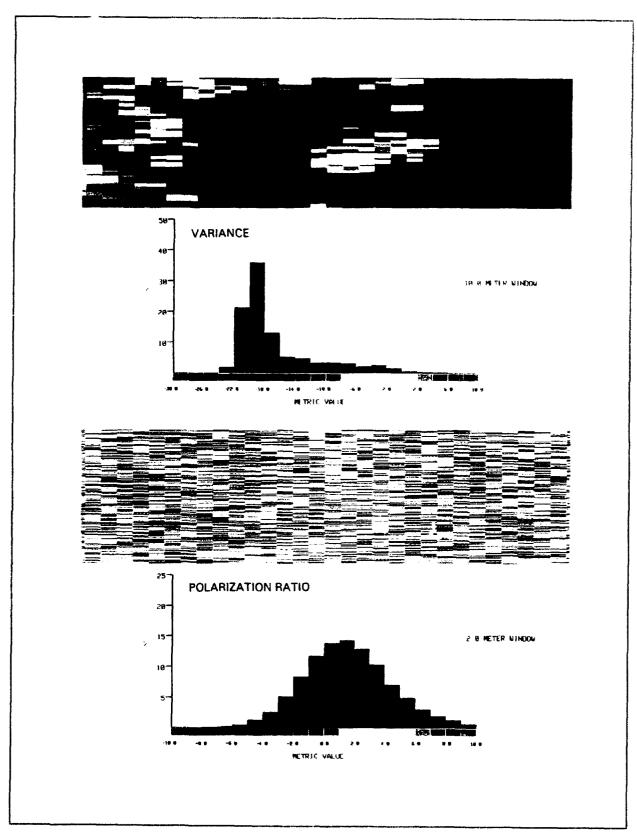


Figure C19. (Sheet 6 of 7)

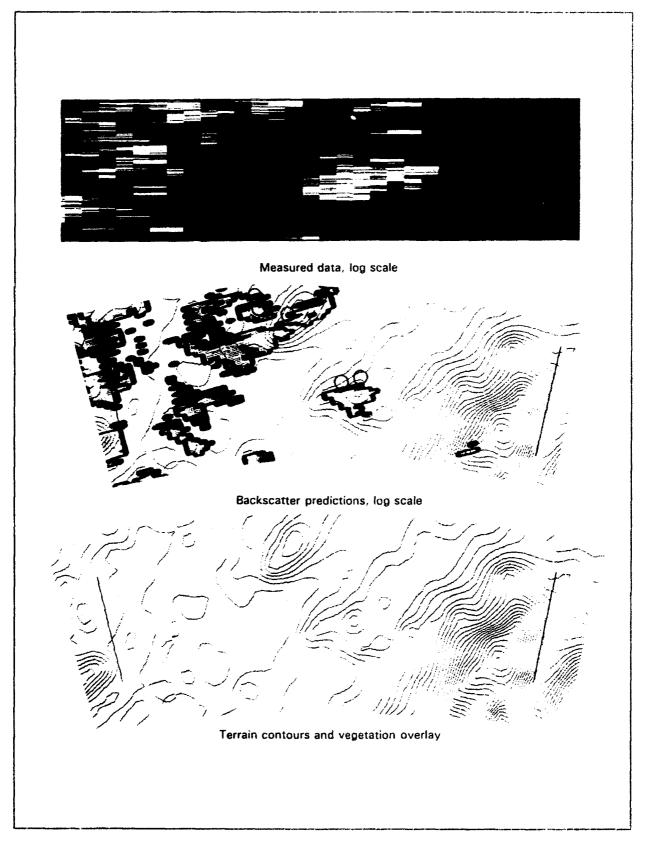


Figure C19. (Sheet 7 of 7)

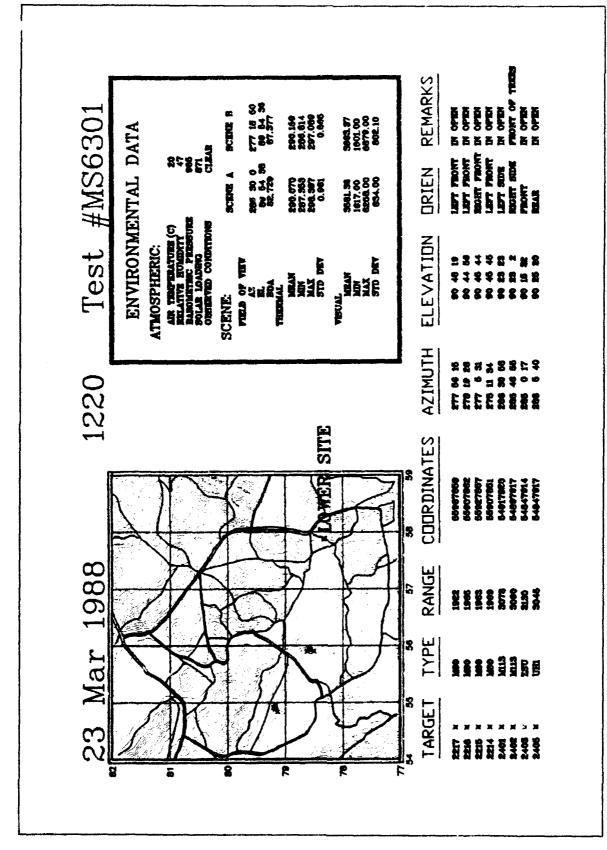
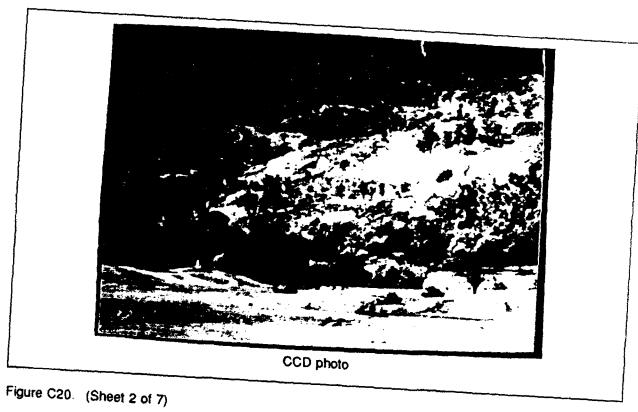


Figure C20. Summary data for MS6301 Short Range (Sheet 1 of 7)



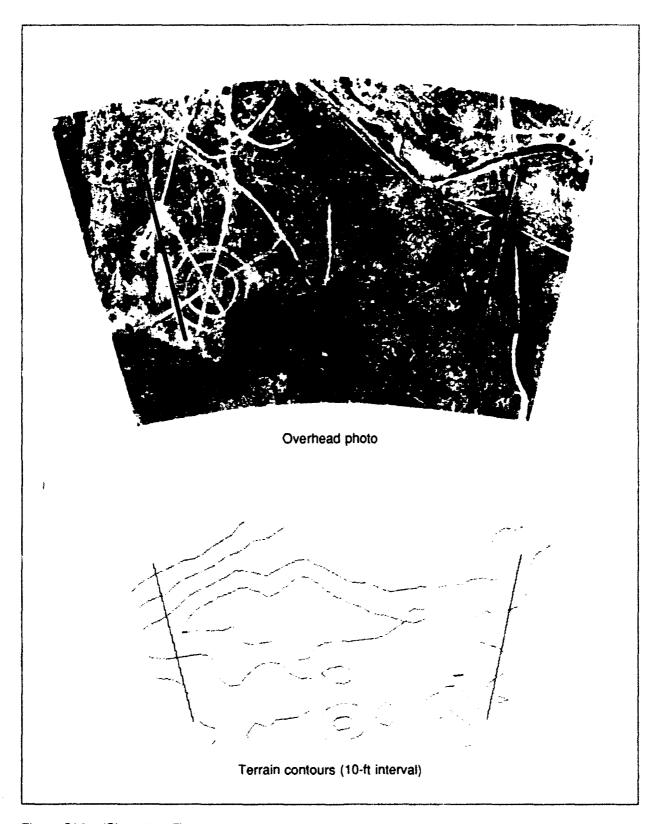


Figure C20. (Sheet 3 of 7)

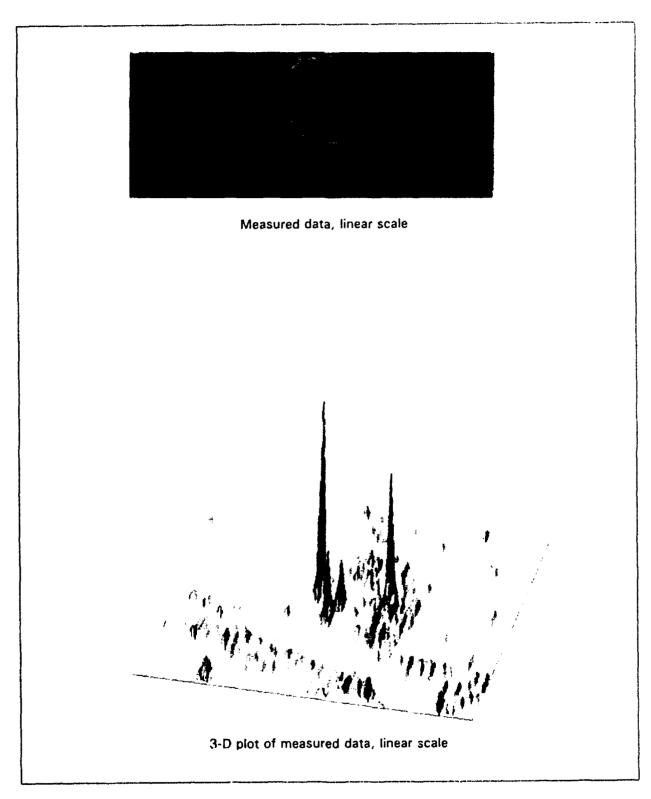


Figure C20. (Sheet 4 of 7)

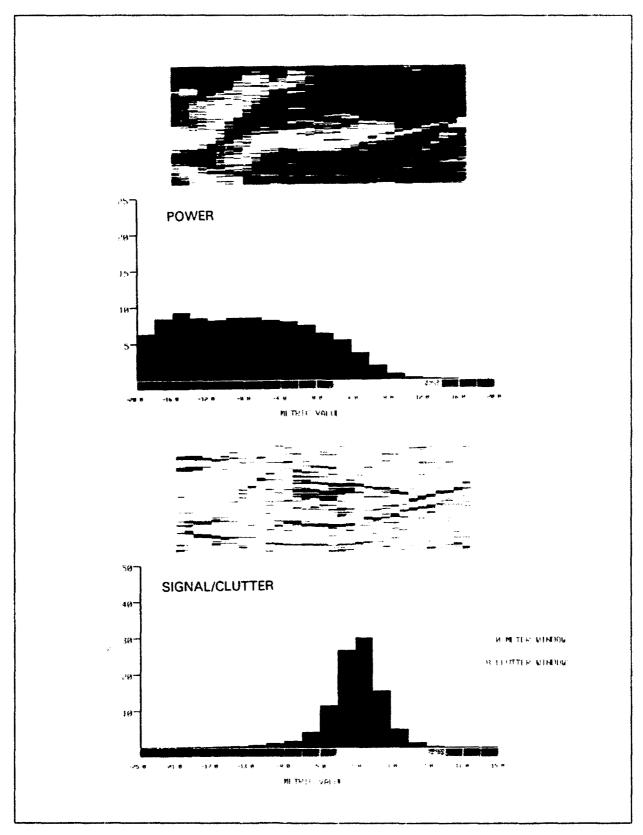


Figure C20. (Sheet 5 of 7) C130

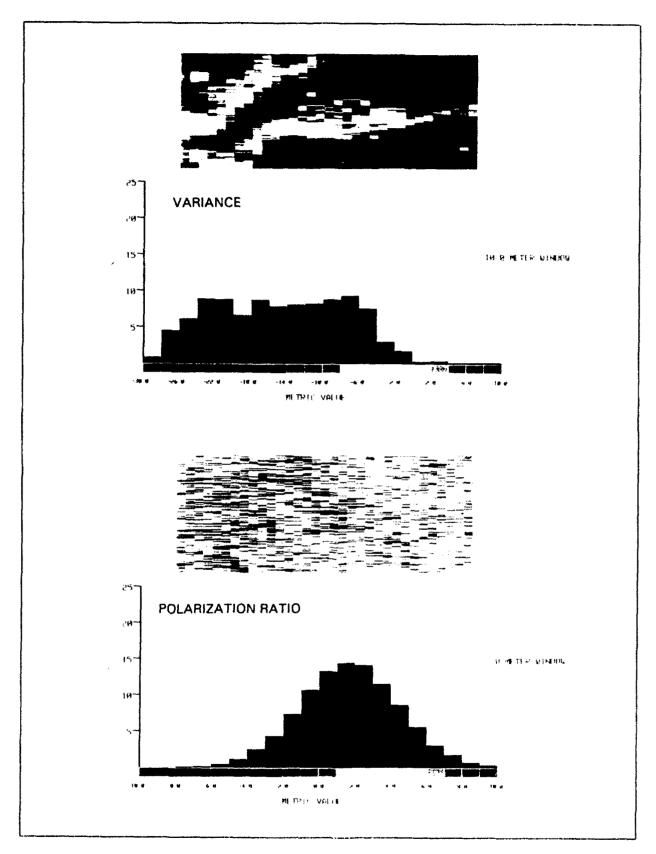


Figure C20. (Sheet 6 of 7)



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

Figure C20. (Sheet 7 of 7)

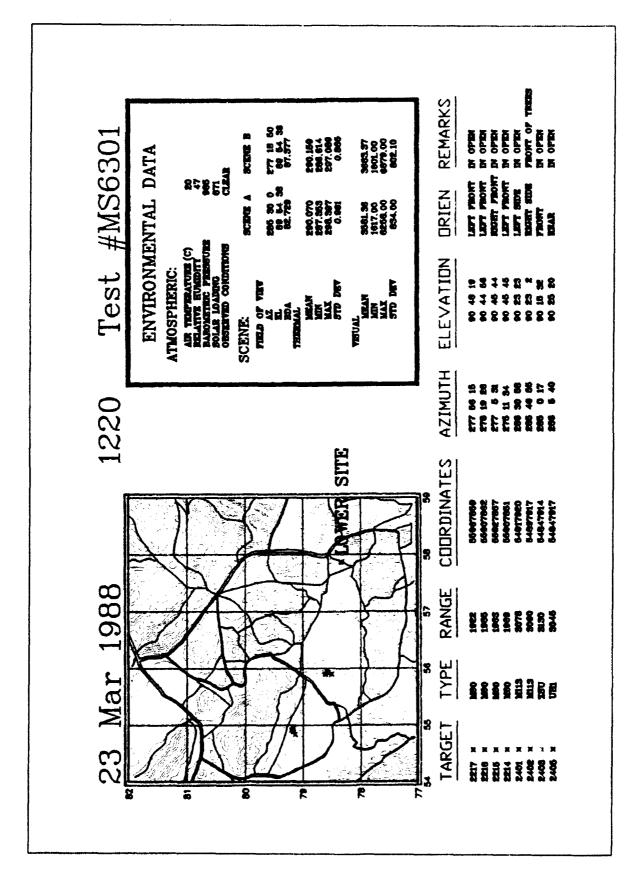


Figure C21. Summary data for MS6301 Long Range (Sheet 1 of 7)

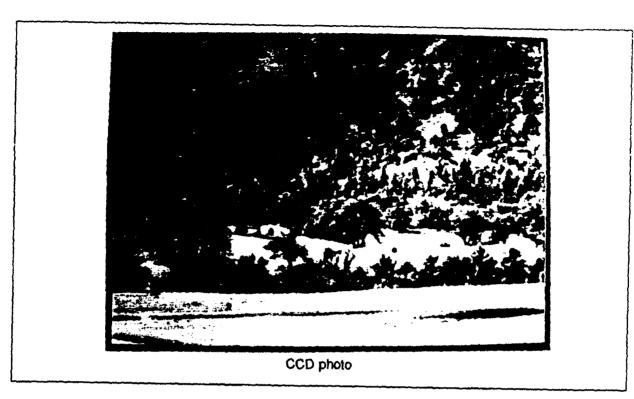


Figure C21. (Sheet 2 of 7)

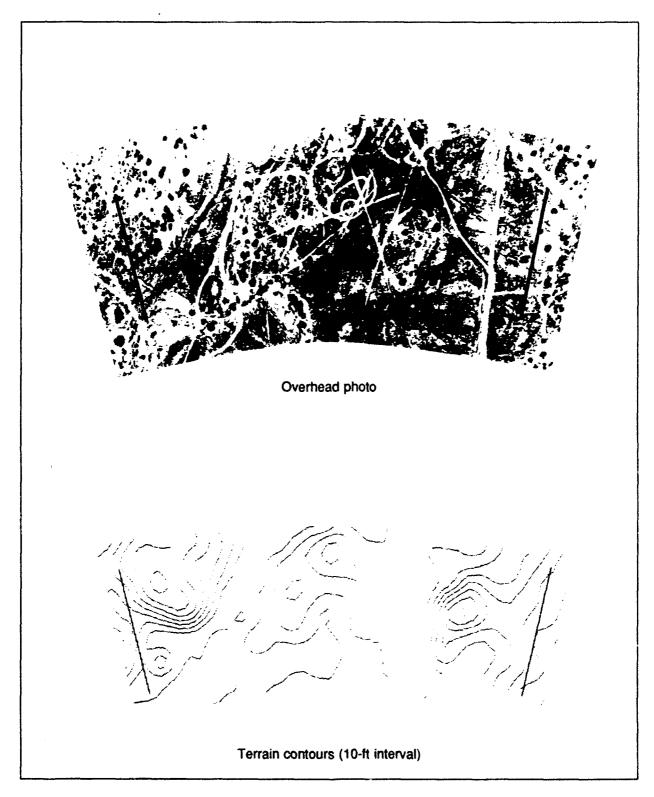


Figure C21. (Sheet 3 of 7)

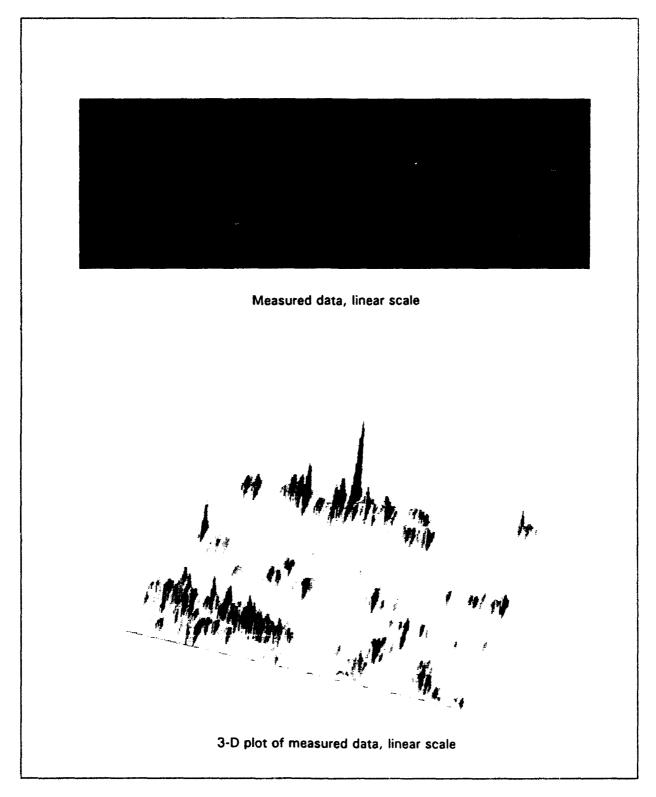


Figure C21 (Sheet 4 of 7)

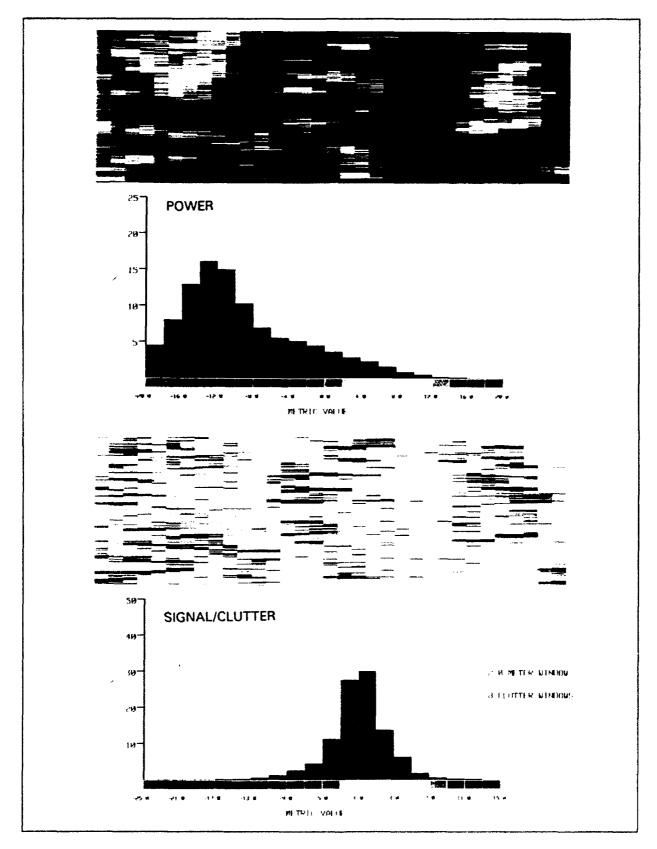


Figure C21. (Sheet 5 of 7)

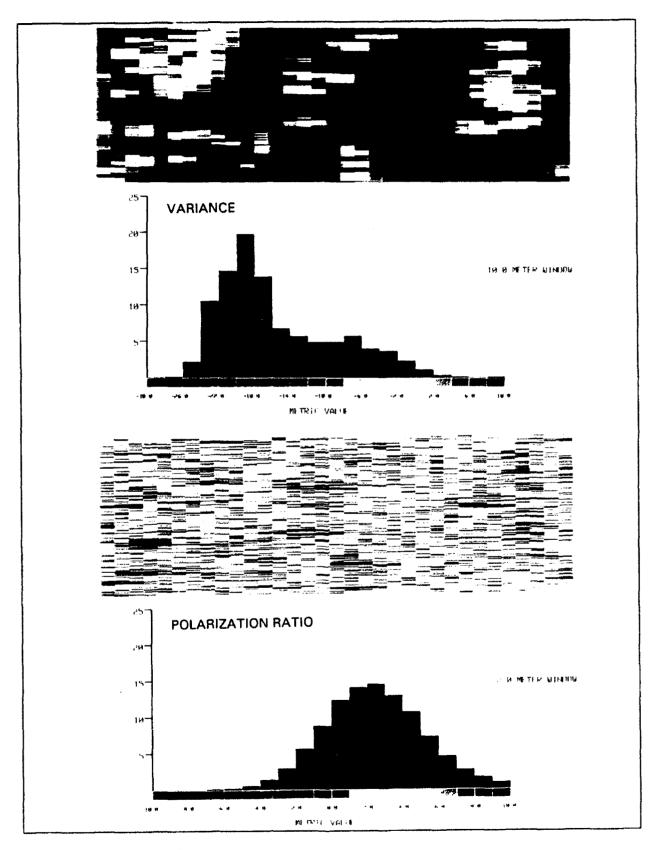


Figure C21. (Sheet 6 of 7)

C138

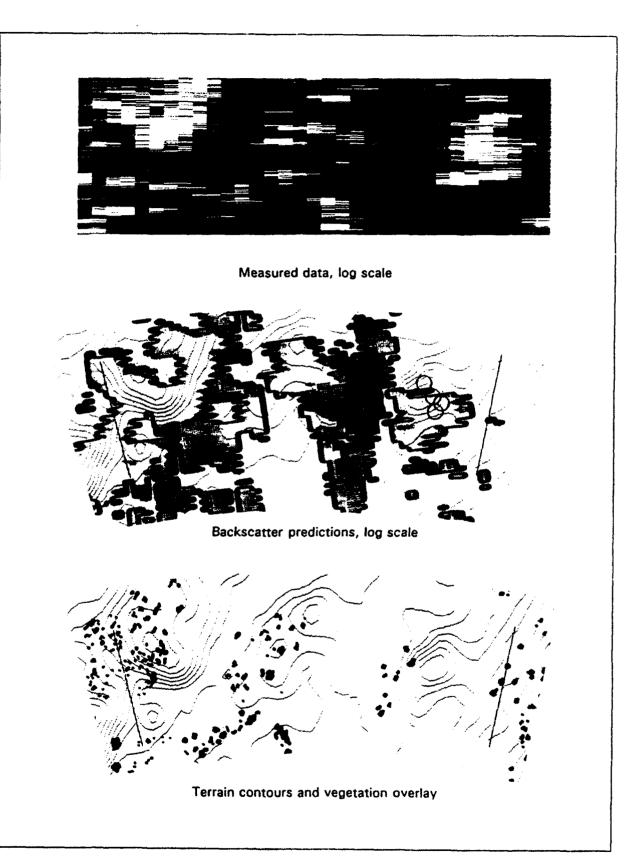


Figure C21. (Sheet 7 of 7)

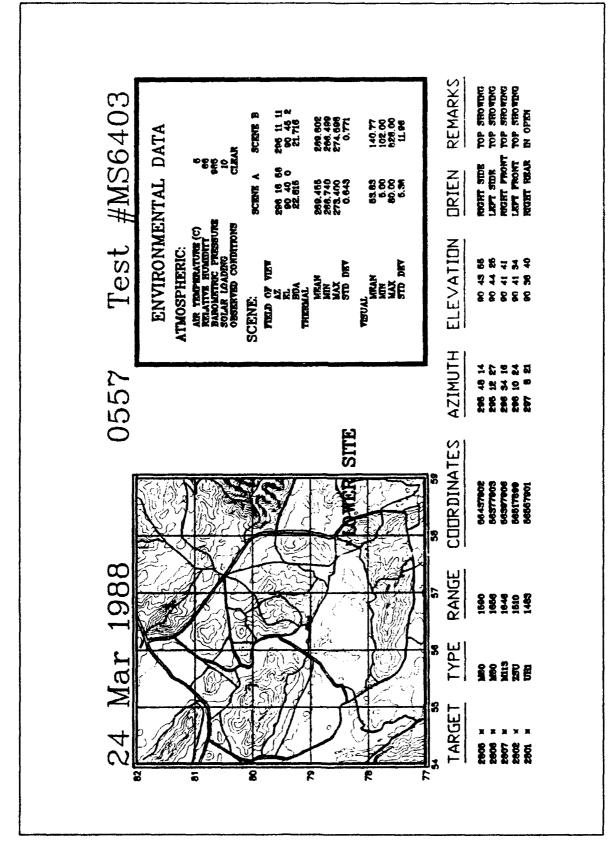


Figure C22. Summary data for MS6403 (Sheet 1 of 7)

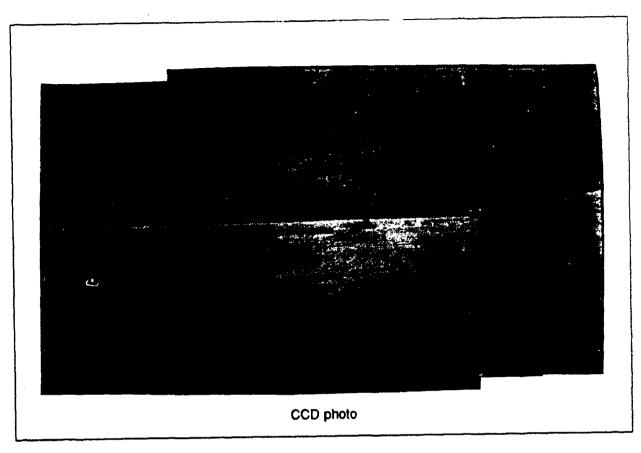


Figure C22. (Sheet 2 of 7)

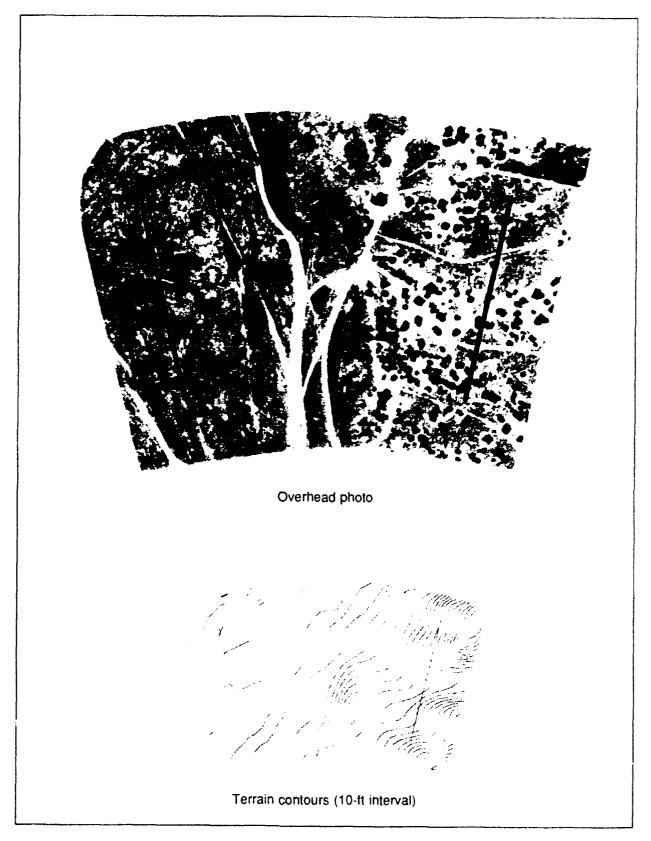


Figure C22. (Sheet 3 of 7)

C142

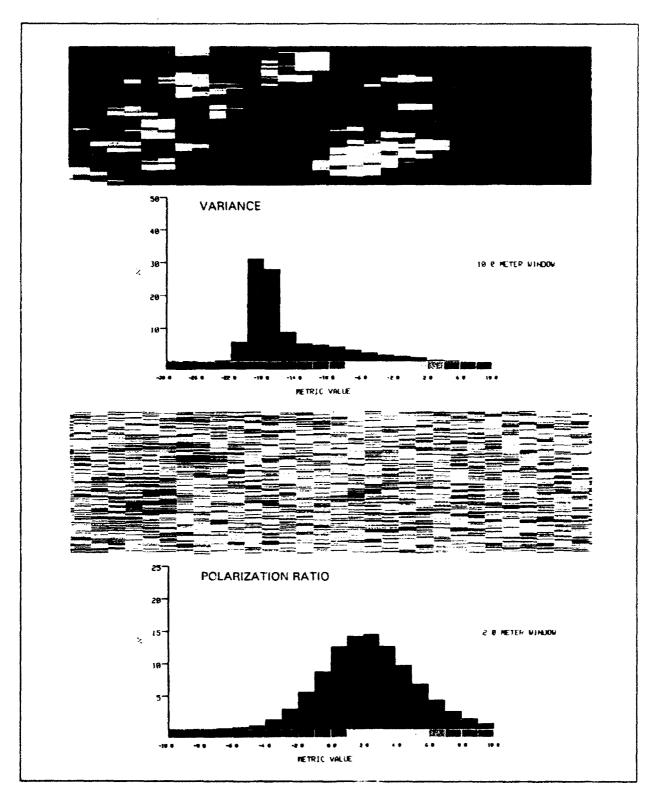


Figure C22. (Sheet 4 of 7)

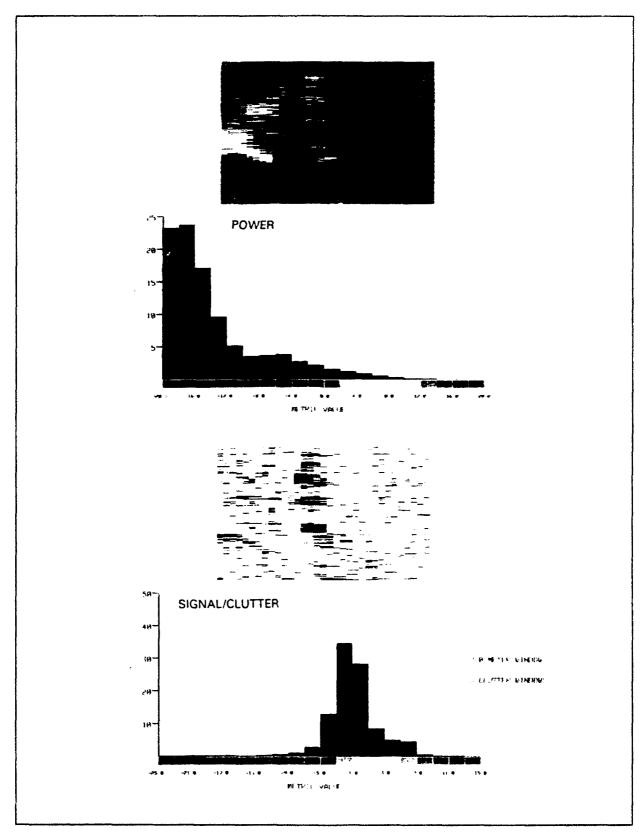


Figure C22. (Sheet 5 of 7) C144

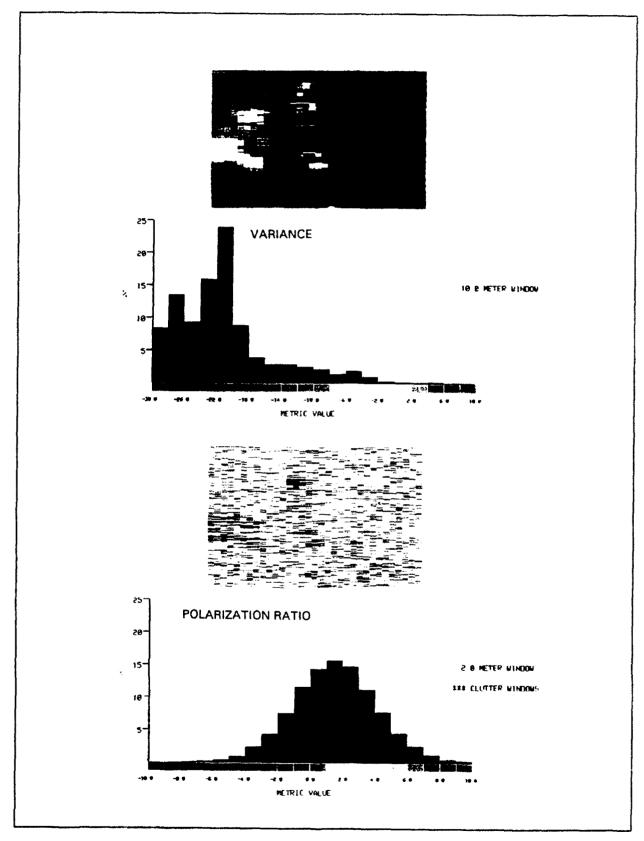
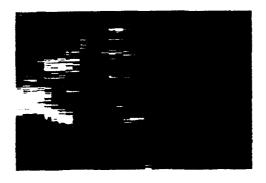


Figure C22. (Sheet 6 of 7)



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

Figure C22. (Sheet 7 of 7)

C146

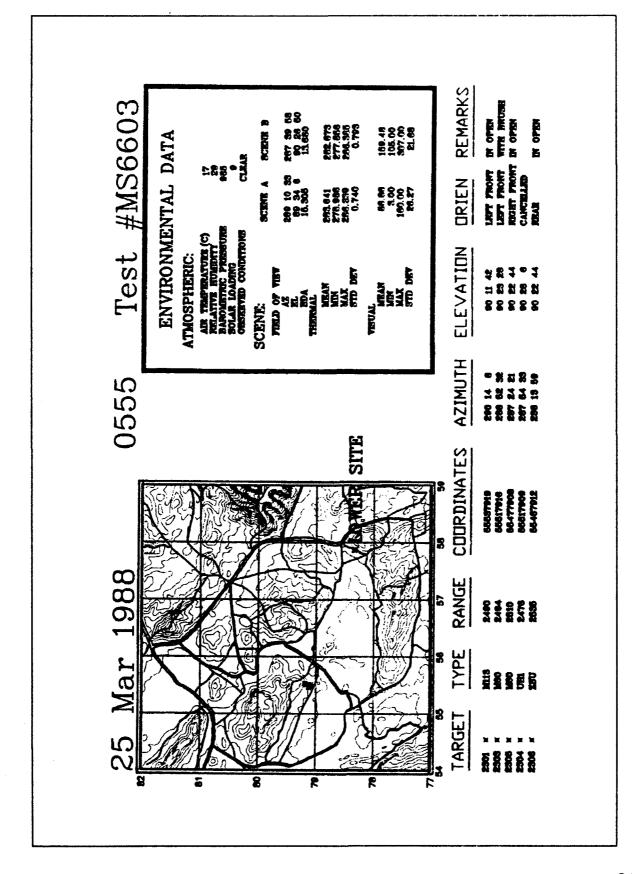


Figure C23. Summary data for MS6603 (Sheet 1 of 7)

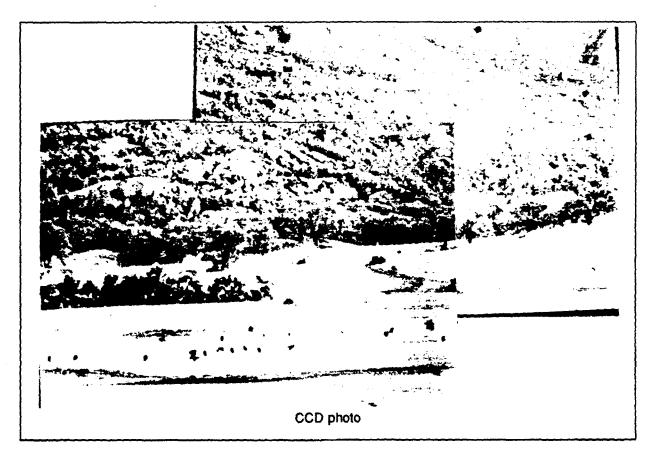


Figure C23. (Sheet 2 of 7)

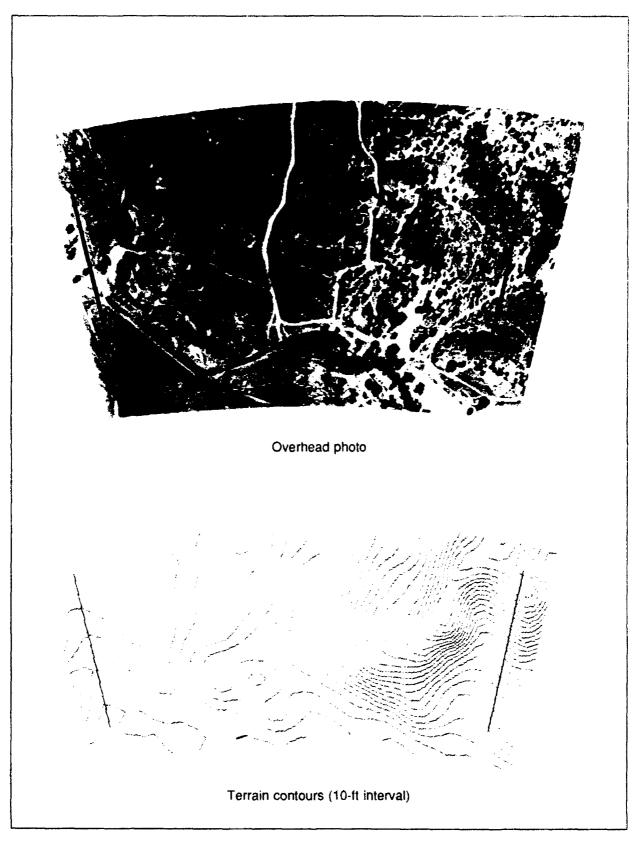


Figure C23. (Sheet 3 of 7)

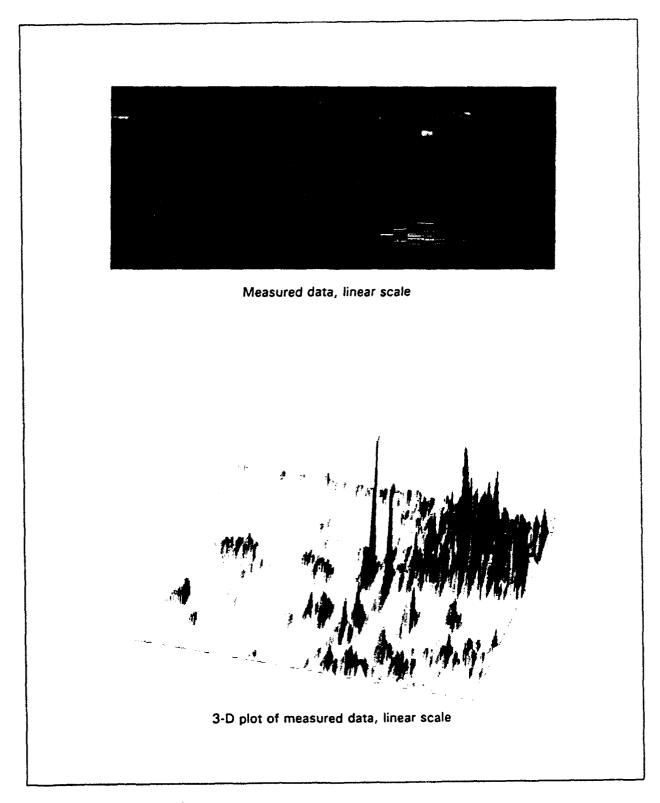


Figure C23. (Sheet 4 of 7)

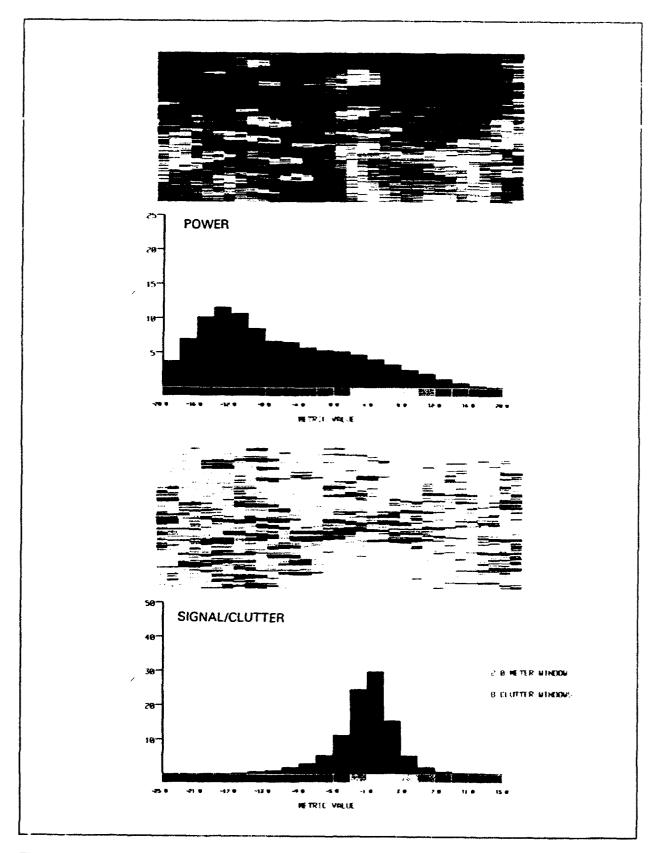


Figure C23. (Sheet 5 of 7)

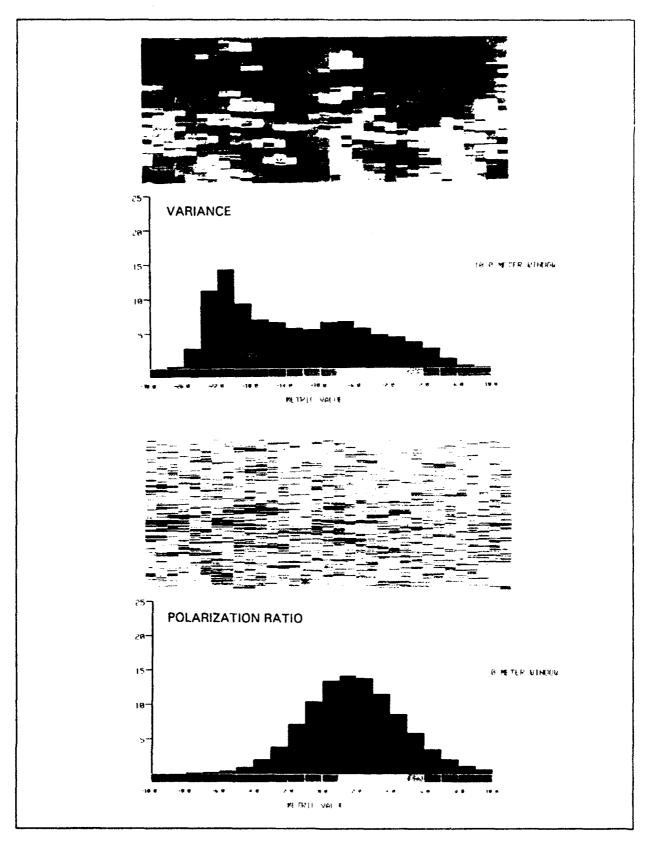
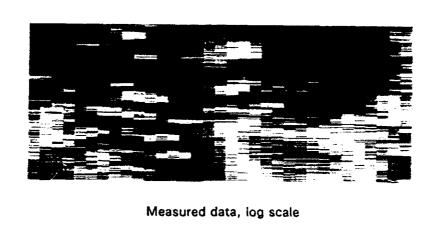
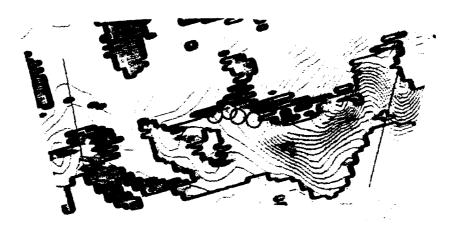


Figure C23. (Sheet 6 of 7) C152





Backscatter predictions, log scale



Terrain contours and vegetation overlay

Figure C23. (Sheet 7 of 7)

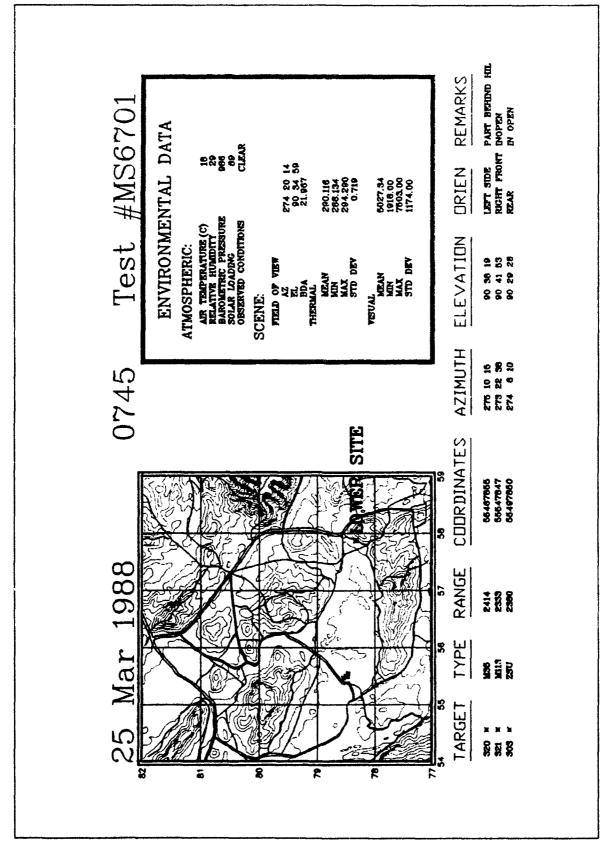


Figure C24. Summary data for MS6701 (Sheet 1 of 7)

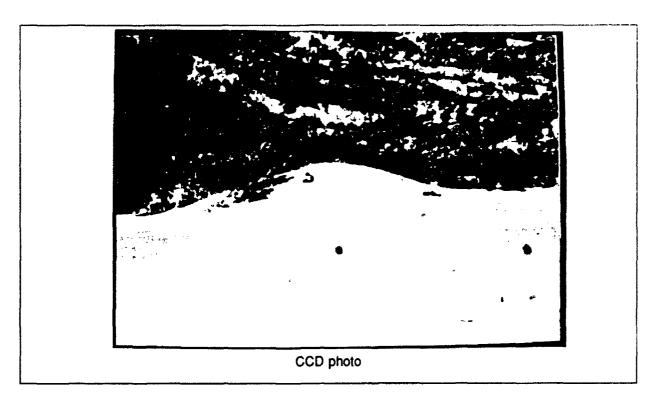
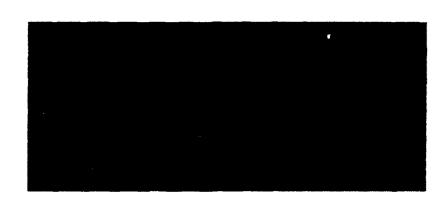


Figure C24. (Sheet 2 of 7)



Figure C24. (Sheet 3 of 7)



Measured data, linear scale

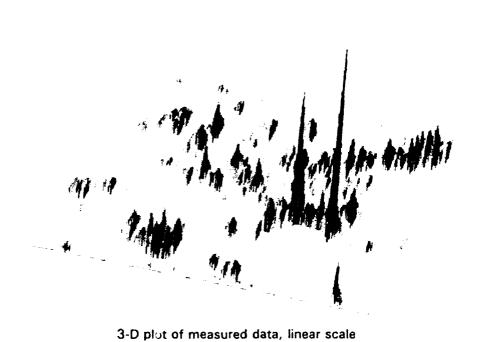


Figure C24. (Sheet 4 of 7)

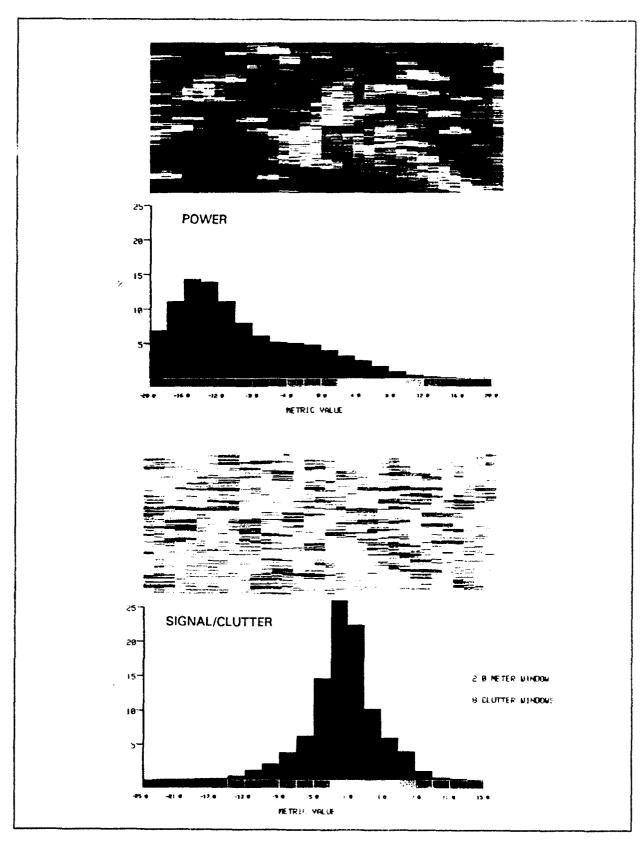


Figure C24. (Sheet 5 of 7) C158

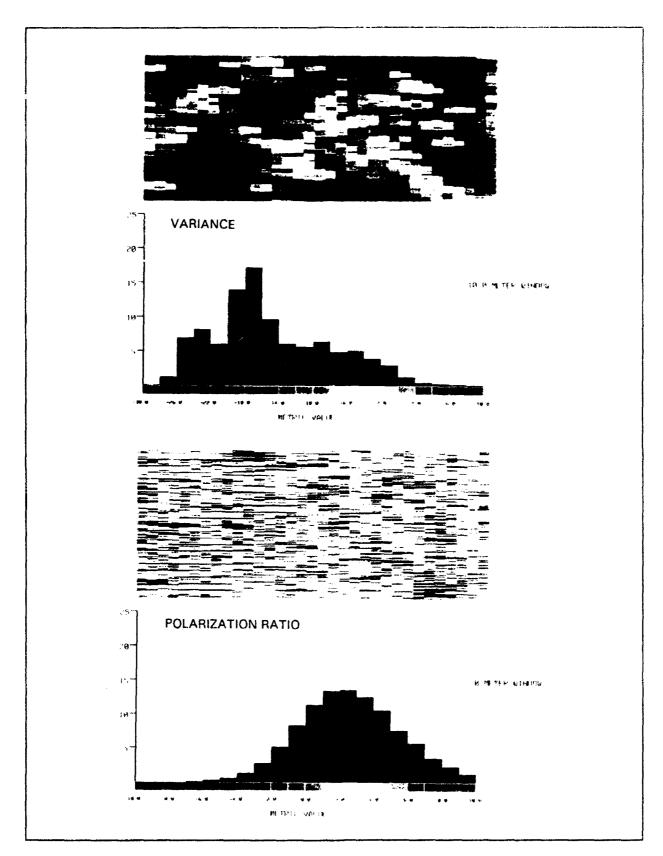


Figure C24. (Sheet 6 of 7)



Measured data, log scale



Backscatter predictions, log scale



Terrain contours and vegetation overlay

Figure C24. (Sheet 7 of 7)

## REPORT DOCUMENTATION PAGE

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In an attempt to develop a scene characterization methodology for long-range (2 to 7 km), low-grazing angle (<10 deg or .17 radians) active millimeter wave radar systems, a twofold approach is taken. First, slant range versus azimuth maps of radar backscatter measurements are filtered to collect statistics on the occurrence of target-like features and to relate those signatures to natural terrain conditions. Second, a prediction of radar return from the terrain is modeled by a point light source at the radar location and the assumption of Lambertian scattering from the terrain facets. Model predictions are combined with overlays of vegetation at each test site and compared qualitatively with the measured data to assess the impact of terrain conditions on backscatter response. These approaches are applied to a set of test site K <sub>a</sub> -band radar measurements made at Fort Hunter Liggett during the winter of 1988.				
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